

# MDX-CA790X

## SERVICE MANUAL

Ver 1.0 2003.03

AEP Model  
UK Model



U.S. and foreign patents licensed from Dolby Laboratories.

Model Name Using Similar Mechanism	NEW
Base Mechanism Type	MG-165A-138
Optical Pick-up Name	KMS-242E

### SPECIFICATIONS

#### MD Player section

Signal-to-noise ratio	90 dB
Frequency response	10 – 20,000 Hz
Wow and flutter	Below measurable limit

#### Tuner section

##### FM

Tuning range	87.5 – 108.0 MHz
Aerial terminal	External aerial connector
Intermediate frequency	10.7 MHz/450 kHz
Usable sensitivity	9 dBf
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	67 dB (stereo), 69 dB (mono)
Harmonic distortion at 1 kHz	0.5 % (stereo), 0.3 % (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz

##### MW/LW

Tuning range	MW: 531 – 1,602 kHz LW: 153 – 279 kHz
Aerial terminal	External aerial connector
Intermediate frequency	10.7 MHz/450 kHz
Sensitivity	MW: 30 $\mu$ V LW: 40 $\mu$ V

#### Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	4 – 8 ohms
Maximum power output	50 W $\times$ 4 (at 4 ohms)

#### General

Outputs	Audio outputs (front) Audio outputs (rear) Power aerial relay control terminal Power amplifier control terminal Telephone ATT control terminal Remote controller input terminal BUS control input terminal BUS audio input terminal
Inputs	Low $\pm$ 10 dB at 60 Hz (XPLOD) Mid $\pm$ 10 dB at 1 kHz (XPLOD) High $\pm$ 10 dB at 10 kHz (XPLOD)
Tone controls	12 V DC car battery (negative earth)
Power requirements	Approx. 178 $\times$ 50 $\times$ 180 mm (w/h/d)
Dimensions	Approx. 182 $\times$ 53 $\times$ 161 mm (w/h/d)
Mounting dimensions	Mass Approx. 1.2 kg
Mass	Supplied accessories Parts for installation and connections Front panel case (1)

#### Note

*This unit cannot be connected to a digital preamplifier  
or an equalizer which is Sony BUS system compatible.*

*Design and specifications are subject to change  
without notice.*

### FM/MW/LW MINIDISC PLAYER

9-877-086-01  
2003C0500-1  
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e Vehicle Company  
Published by Sony Engineering Corporation

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## TABLE OF CONTENTS

<b>1. SERVICING NOTES</b>	3
<b>2. GENERAL</b>	
Location of Controls	4
<b>3. DISASSEMBLY</b>	
3-1. Disassembly Flow	8
3-2. Sub Panel Assy	9
3-3. Mechanism Deck (MG-165A-138)	9
3-4. MAIN Board	10
3-5. SERVO Board	10
3-6. MD Cover Assy	11
3-7. Float Block	11
3-8. Lever (LE23) Assy	12
3-9. Holder Assy	12
3-10. Chucking Arm Assy	13
3-11. Optical Pick-up (KMS-242E)	13
3-12. SL Motor Assy (Sled) (M902), SP Motor Assy (Spindle) (M901)	14
<b>4. ELECTRICAL ADJUSTMENTS</b>	
Test Mode	15
MD Section	15
Tuner Section	15
<b>5. DIAGRAMS</b>	16
5-1. Block Diagram – SERVO Section –	20
5-2. Block Diagram – MAIN Section –	21
5-3. Block Diagram – PANEL/BUS CONTROL/ POWER SUPPLY Section –	22
5-4. Note for Printed Wiring Boards and Schematic Diagrams	23
5-5. Schematic Diagram – SERVO Section (1/2) –	24
5-6. Schematic Diagram – SERVO Section (2/2) –	25
5-7. Printed Wiring Boards – SERVO Section –	26
5-8. Printed Wiring Boards – MAIN Section –	27
5-9. Schematic Diagram – MAIN Section (1/3) –	28
5-10. Schematic Diagram – MAIN Section (2/3) –	29
5-11. Schematic Diagram – MAIN Section (3/3) –	30
5-12. Printed Wiring Board – SUB Section –	31
5-13. Schematic Diagram – SUB Section –	31
5-14. Printed Wiring Board – KEY Section –	32
5-15. Schematic Diagram – KEY Section –	33
5-16. IC Pin Function Description	34
<b>6. EXPLODED VIEWS</b>	
6-1. Chassis Section	41
6-2. Front Panel Section	42
6-3. Mechanism Deck Section-1 (MG-165A-138)	43
6-4. Mechanism Deck Section-2 (MG-165A-138)	44
6-5. Mechanism Deck Section-3 (MG-165A-138)	45
<b>7. ELECTRICAL PARTS LIST</b>	46

**CLASS 1  
LASER PRODUCT**

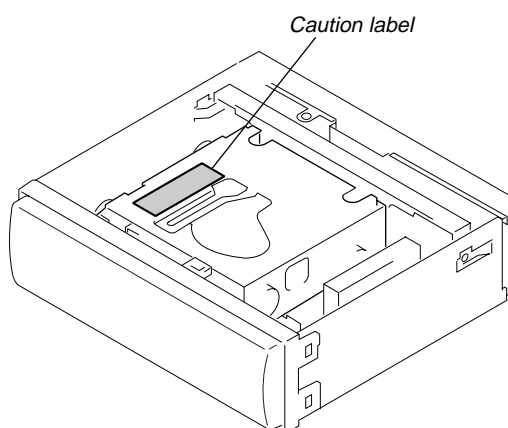
This product is classified as a  
CLASS 1 LASER PRODUCT.

This label is located on the bottom of the  
chassis.

**CAUTION—INVISIBLE LASER RADIATION WHEN OPEN  
DO NOT STARE INTO BEAM OR  
VIEW DIRECTLY WITH OPTICAL INSTRUMENTS**

This label is located on the drive unit's internal  
chassis. (Refer to below figure)

– Upper view –



During service do not take the Optical Pick-up Block apart and do not adjust the APC circuit. If there is a breakdown in the APC circuit (including laser diode), replace the entire Optical Pick-up Block (including SERVO board).

**SAFETY-RELATED COMPONENT WARNING!!**

COMPONENTS IDENTIFIED BY MARK  $\triangle$  OR DOTTED LINE WITH MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

## SECTION 1

### SERVICING NOTES

#### NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.

During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.

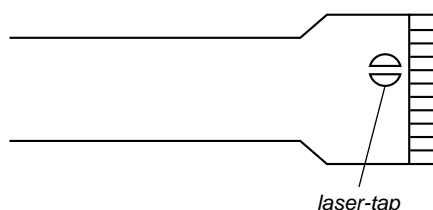
The flexible board is easily damaged and should be handled with care.

#### NOTES ON LASER DIODE EMISSION CHECK

Never look into the laser diode emission from right above when checking it for adjustment. It is feared that you will lose your sight.

#### NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK (KMS-242E).

The laser diode in the optical pick-up block may suffer electrostatic break-down easily. When handling it, perform soldering bridge to the laser-tap on the flexible board. Also perform measures against electrostatic break-down sufficiently before the operation. The flexible board is easily damaged and should be handled with care.



**OPTICAL PICK-UP FLEXIBLE BOARD**

#### Notes on chip component replacement

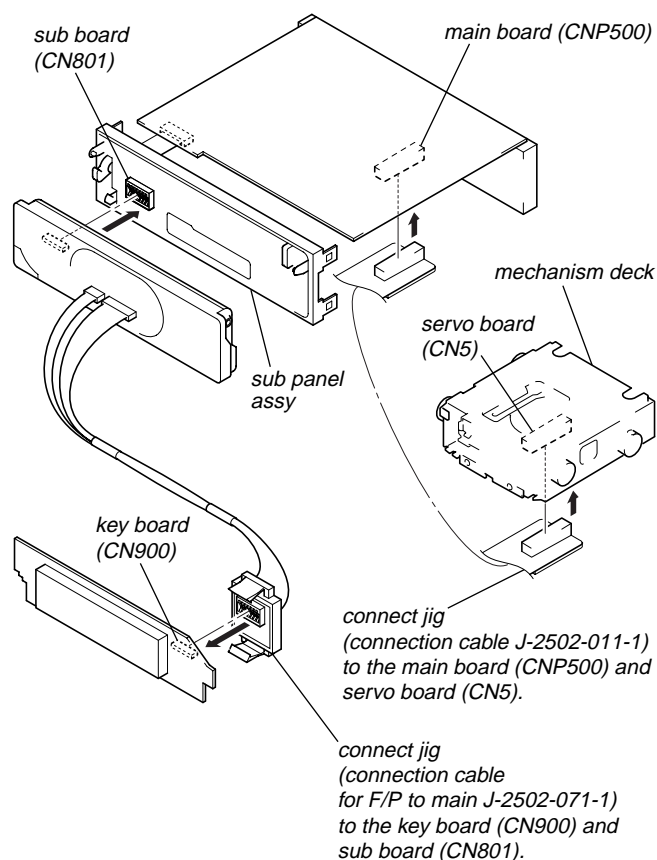
- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

#### Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 °C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

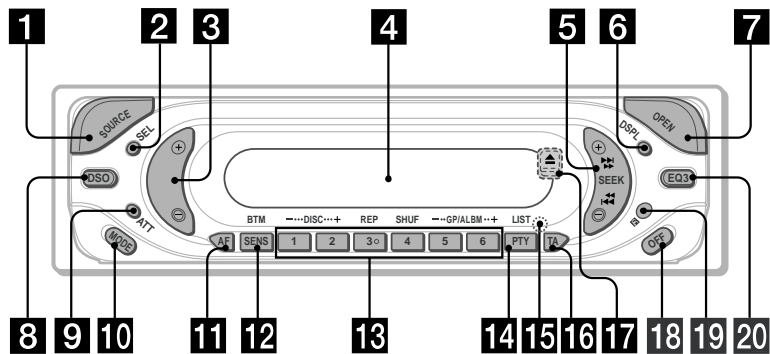
#### SERVICE POSITION

In checking the key board and main board, prepare two jigs (connection cable J-2502-011-1 and connection cable for F/P to main J-2502-071-1).



This section is extracted from instruction manual.

Location of controls



- 1 SOURCE (Power on/Radio/CD\*1/MD) button**  
Selecting the source
- 2 SEL (select) button**  
Selecting items.
- 3 Volume +/- button**
- 4 Display window**
- 5 SEEK +/- button**  
To skip tracks, fast-forward, reverse a track, tune in stations automatically, find a station manually.
- 6 DSPL (display mode change) button**
- 7 OPEN button**
- 8 DSO button**
- 9 ATT (attenuate) button**
- 10 MODE button**  
Changing the operation
- 11 AF button**
- 12 SENS/BTM button**
- 13 Number buttons**  
Radio:  
Storing the desired station on each number button.  
MD/CD\*1:  
①: DISC —\*1  
②: DISC +\*1  
③: REP  
④: SHUF  
⑤: GP\*2/ALBM\*3 —  
⑥: GP\*2/ALBM\*3 +

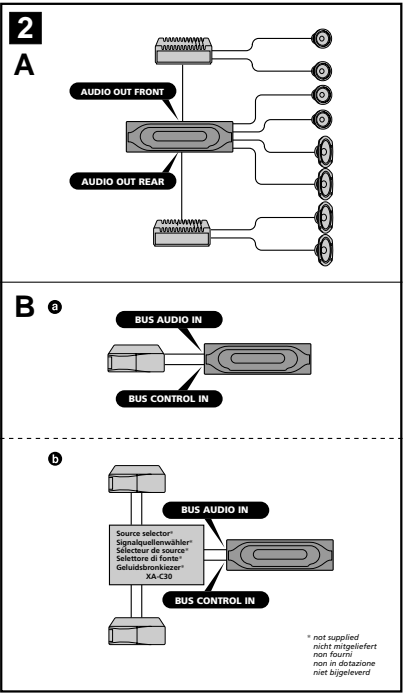
- 14 PTY (programme type) /LIST\*1 button**
- 15 RESET button** (located on the front side of the unit, behind the front panel)
- 16 TA button**
- 17 ▲ (eject) button** (located on the front side of the unit, behind the front panel)
- 18 OFF (Stop/Power off) button\*4**
- 19 Receptor for the card remote commander**
- 20 EQ3 button**

\*1 When an optional MD/CD unit is connected.

\*2 Available only when an MD containing groups is inserted in this unit.

\*3 Available only when an optional CD unit with the MP3 file control function is connected.

\*4 **Warning when installing in a car without an ACC (accessory) position on the ignition switch**  
After turning off the ignition, be sure to press and hold (OFF) on the unit until the display disappears.  
Otherwise, the display does not turn off and this causes battery drain.





## 6



Power connection diagram

Auxiliary power connector may vary depending on the car. Check your car's auxiliary power connector diagram to make sure the connections match correctly. There are three basic types (illustrated below). You may need to switch the positions of the red and yellow leads in the car stereo's power connecting cord.

After matching the connections and switched power supply leads correctly, connect the unit to the car's power supply. If you have any questions and problems connecting your unit that are not covered in this manual, please consult the car dealer.

Stromanschlussdiagramm

Der Hilfsstromanschluss kann je nach Fahrzeugtyp unterschiedlich sein. Sehen Sie im Hilfsstromanschlussdiagramm für Ihr Fahrzeug nach, wie die Verbindung ordnungsgemäß vorgenommen werden muss. Es gibt, wie unten abgebildet, drei grundlegende Typen. Sie müssen möglicherweise die rote und gelbe Leitung des Stromversorgungsabels der Autostereoeinheit vertauschen.

Stellen Sie die Anschlüsse her, schließen Sie die geschalteten Stromversorgungsleitungen richtig an und verbinden Sie dann das Gerät mit der Stromversorgung Ihres Fahrzeugs. Wenn beim Anschließen des Geräts Fragen oder Probleme auftreten, die in dieser Bedienungsanleitung nicht erläutert werden, wenden Sie sich bitte an den Autohändler.

Schéma de raccordement de l'alimentation

Le connecteur d'alimentation auxiliaire peut varier suivant le type de voiture. Vérifiez le schéma du connecteur d'alimentation auxiliaire de votre voiture pour vous assurer que les connexions correspondent. Il en existe trois types de base (illustrés ci-dessous). Il se peut que vous deviez commuter la position du fil rouge et jaune du cordon d'alimentation de l'autoradio.

Après avoir établi les connexions et connecté correctement les fils d'alimentation, raccordez l'appareil à l'alimentation de la voiture. Si vous avez des questions ou des difficultés à propos de cet appareil qui ne sont pas abordées dans le présent mode d'emploi, consultez votre concessionnaire automobile.

Schema dei collegamenti di alimentazione

Il connettore di alimentazione ausiliaria può variare a seconda della macchina. Controllare lo schema del connettore di alimentazione ausiliaria della macchina per essere sicuri che le connessioni corrispondano correttamente. Vi sono tre tipi di base (illustrazione sotto). Potrà essere necessario cambiare le posizioni dei cavi rosso e giallo nel cavo di alimentazione dello stereo della macchina. Dopo aver fatto corrispondere le connessioni e aver commutato i cavi di alimentazione, collegare l'apparecchio all'alimentazione della macchina. Se si hanno domande o se sorgono problemi che non sono stati trattati nel manuale relativi ai collegamenti dell'apparecchio, contattare l'autorecessionario.

**Auxiliary power connector**  
Hilfsstromanschluss  
Connecteur d'alimentation auxiliaire  
Connettore di alimentazione ausiliaria  
Hulpvoedingsaansluiting

**a**

4	Yellow Gelb Jaune Giallo Geel	continuous power supply permanente Stromversorgung alimentation continue alimentazione continua continue voeding	7	Red Rot Rouge Rosso Rood	switched power supply geschaltete Stromversorgung alimentation commutée alimentazione commutata geschakelde voeding
---	---	--	---	--------------------------------------	---

**b**

4	Yellow Gelb Jaune Giallo Geel	switched power supply geschaltete Stromversorgung alimentation commutée alimentazione commutata geschakelde voeding	7	Red Rot Rouge Rosso Rood	continuous power supply permanente Stromversorgung alimentation continue alimentazione continua continue voeding
---	---	---	---	--------------------------------------	--

**c**

the car without ACC position  
Fahrzeug ohne Zubehörsposition (ACC)  
Voiture sans position ACC  
macchina priva di posizione ACC  
auto zonder ACC stand

## SECTION 3 DISASSEMBLY

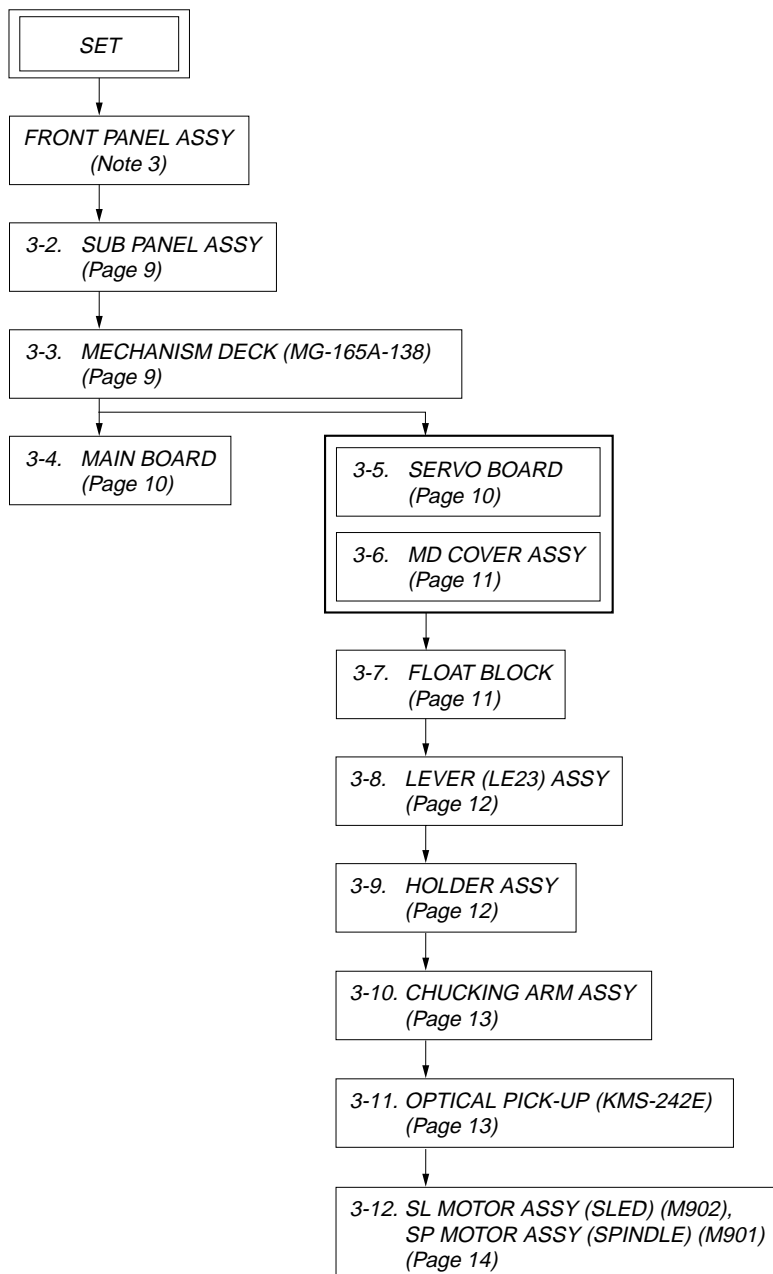
- This set can be disassembled in the order shown below.

### 3-1. DISASSEMBLY FLOW

**Note 1:** The process described in  can be performed in any order.

**Note 2:** Without completing the process described in , the next process can not be performed.

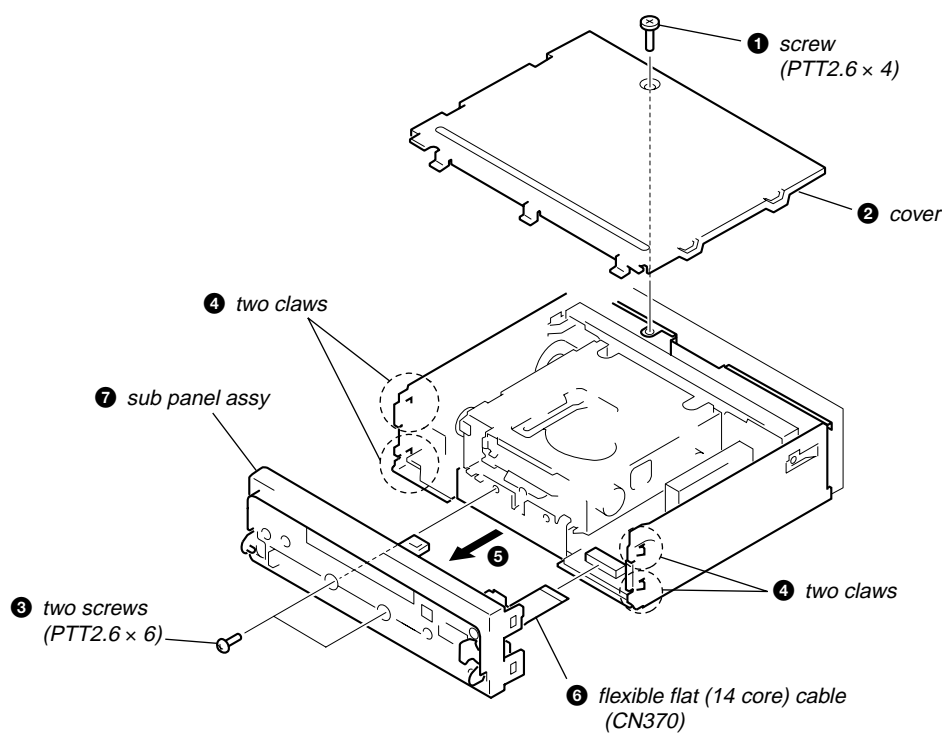
**Note 3:** Illustration of disassembly is omitted.



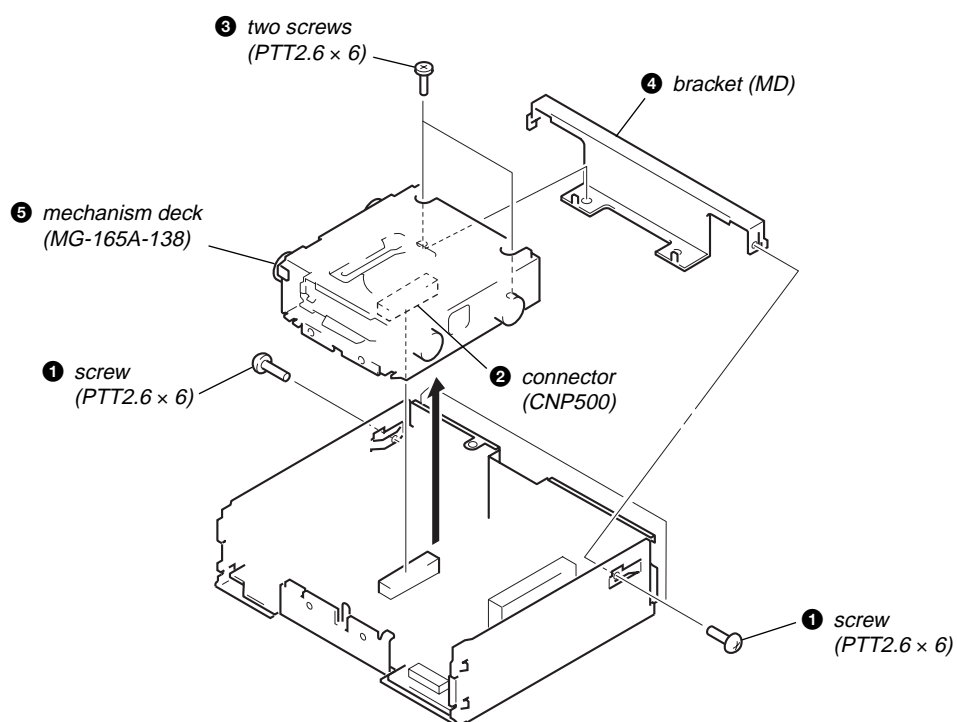


**Note:** Follow the disassembly procedure in the numerical order given.

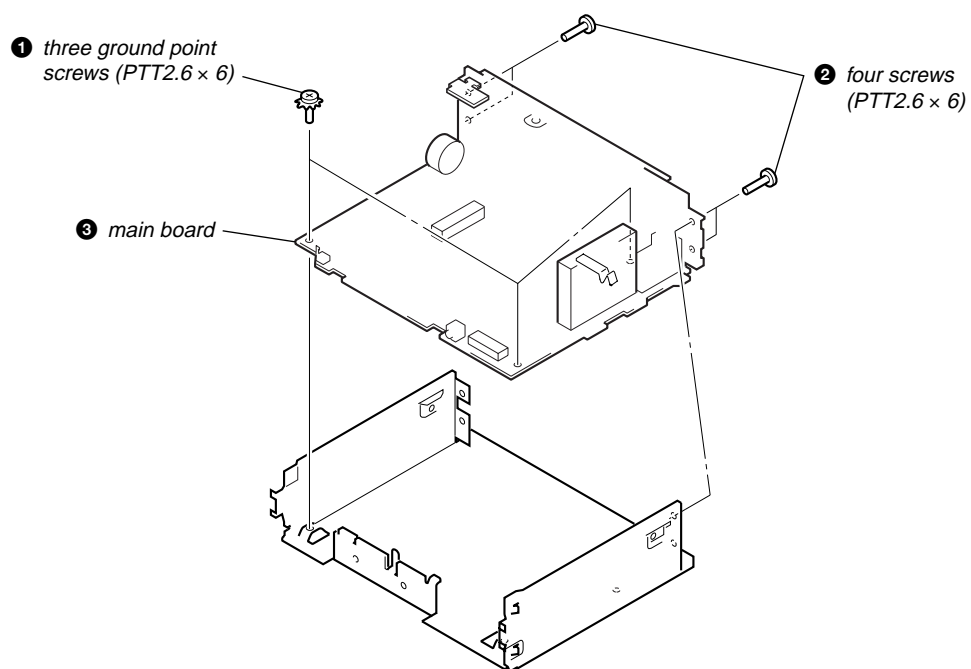
### 3-2. SUB PANEL ASSY



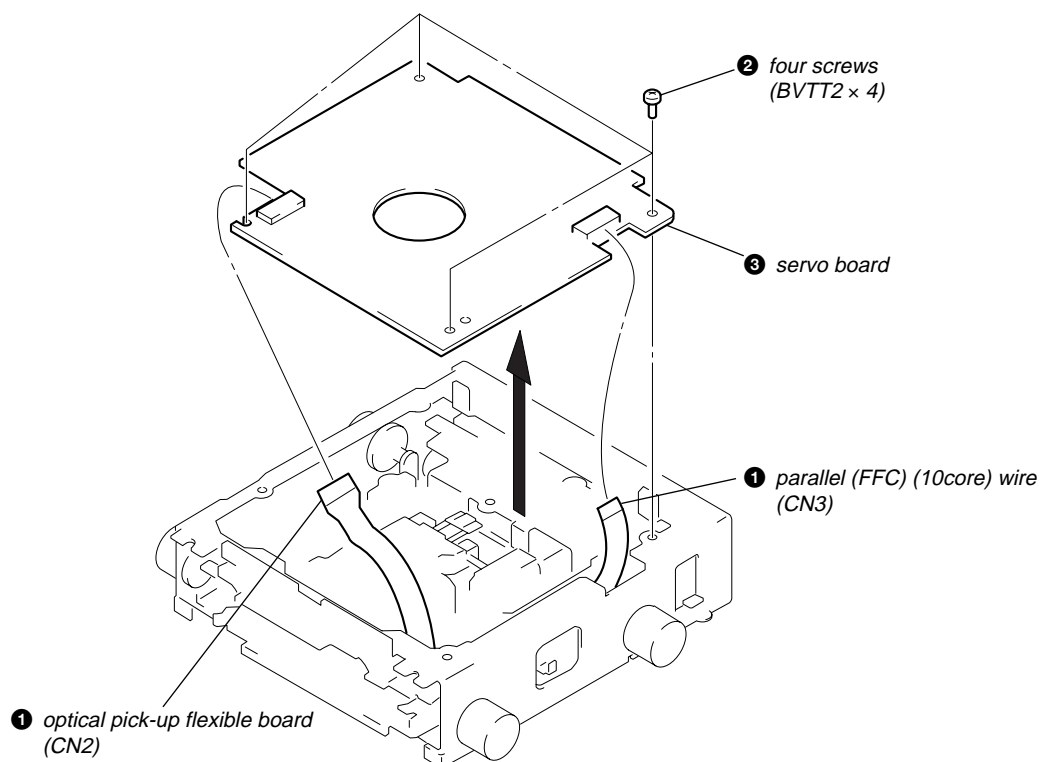
### 3-3. MECHANISM DECK (MG-165A-138)



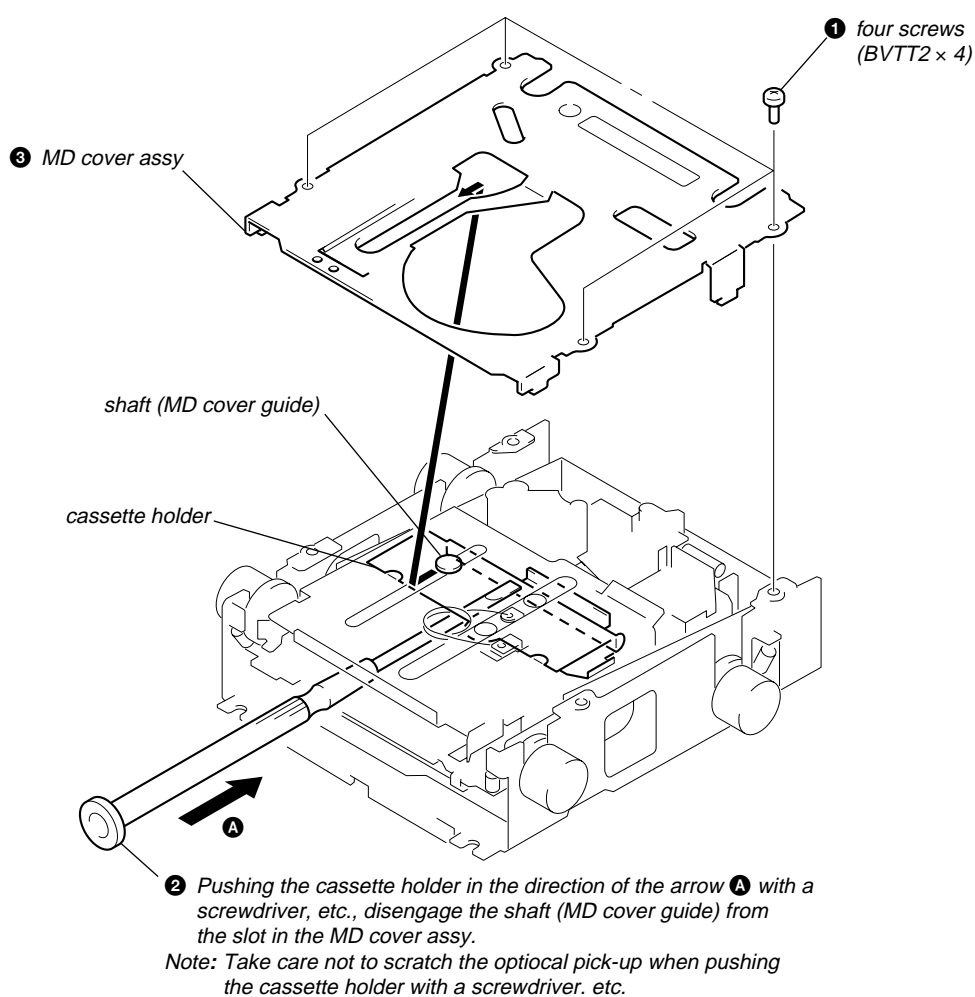
## 3-4. MAIN BOARD



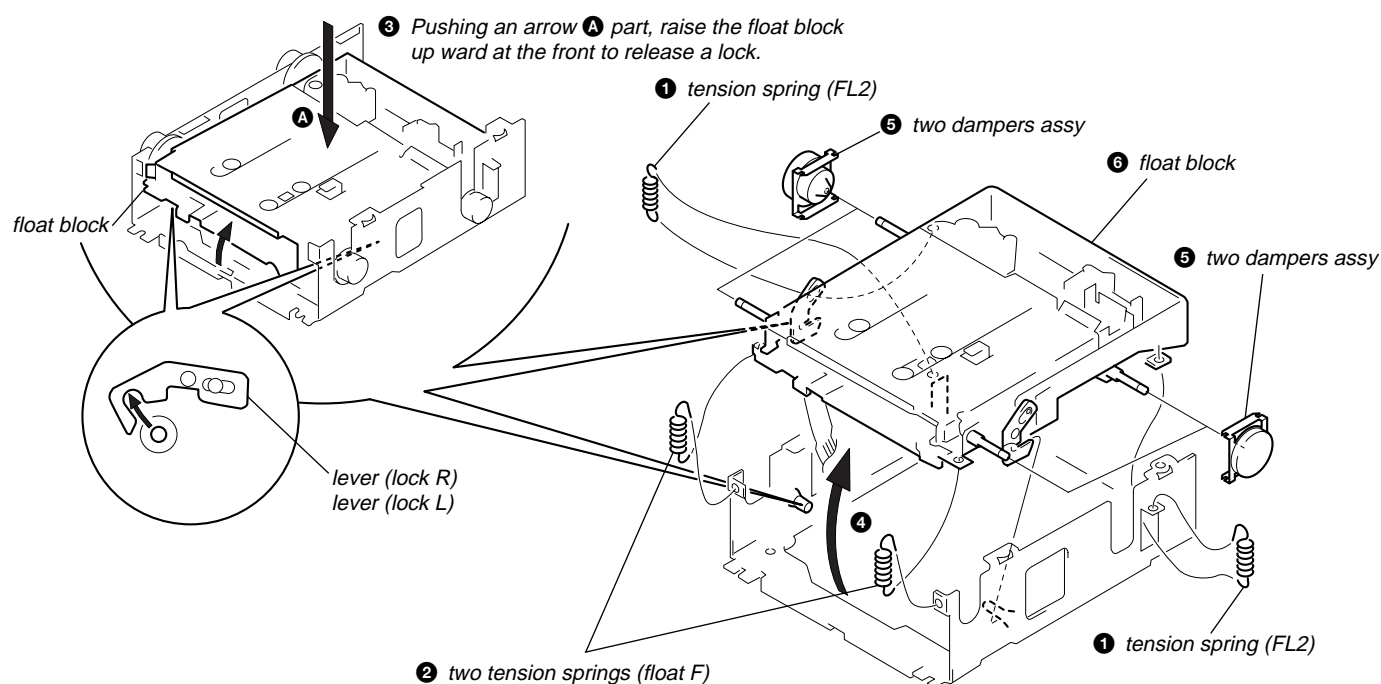
## 3-5. SERVO BOARD



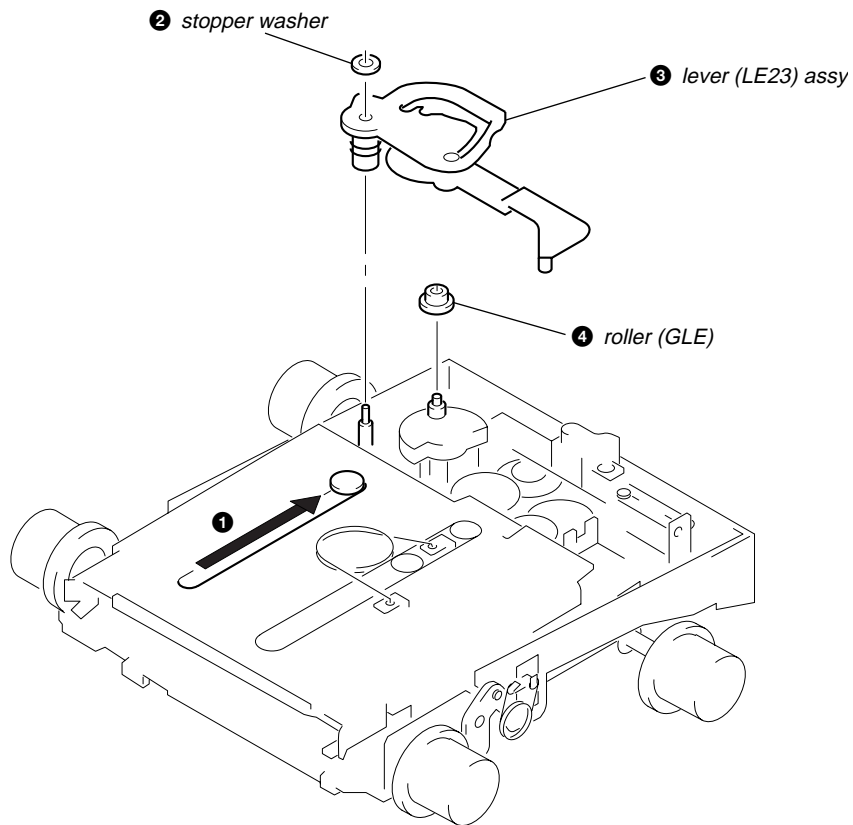
### 3-6. MD COVER ASSY



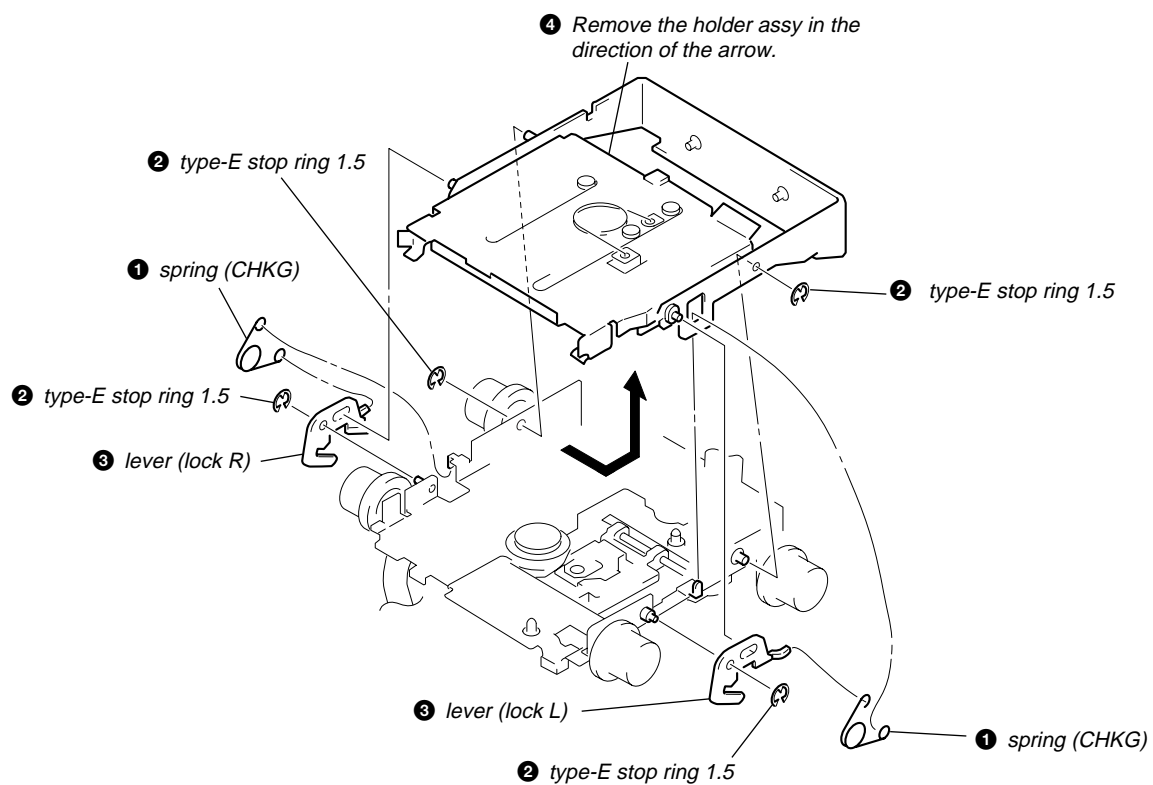
### 3-7. FLOAT BLOCK



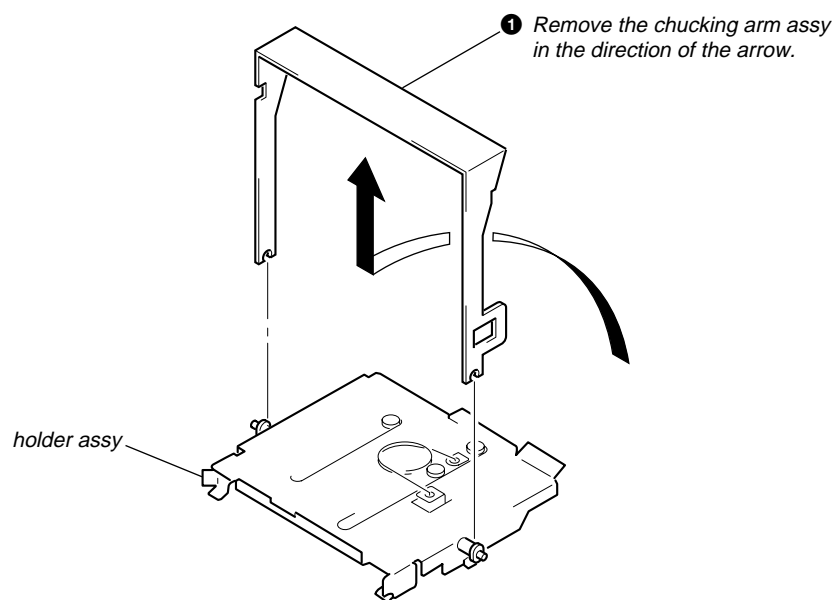
## 3-8. LEVER (LE23) ASSY



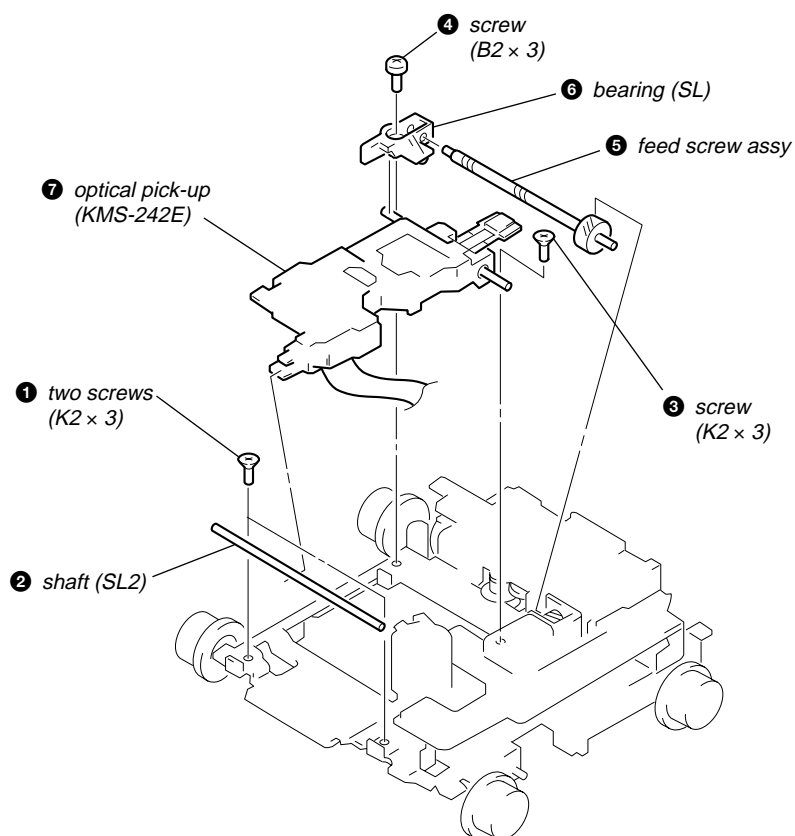
## 3-9. HOLDER ASSY



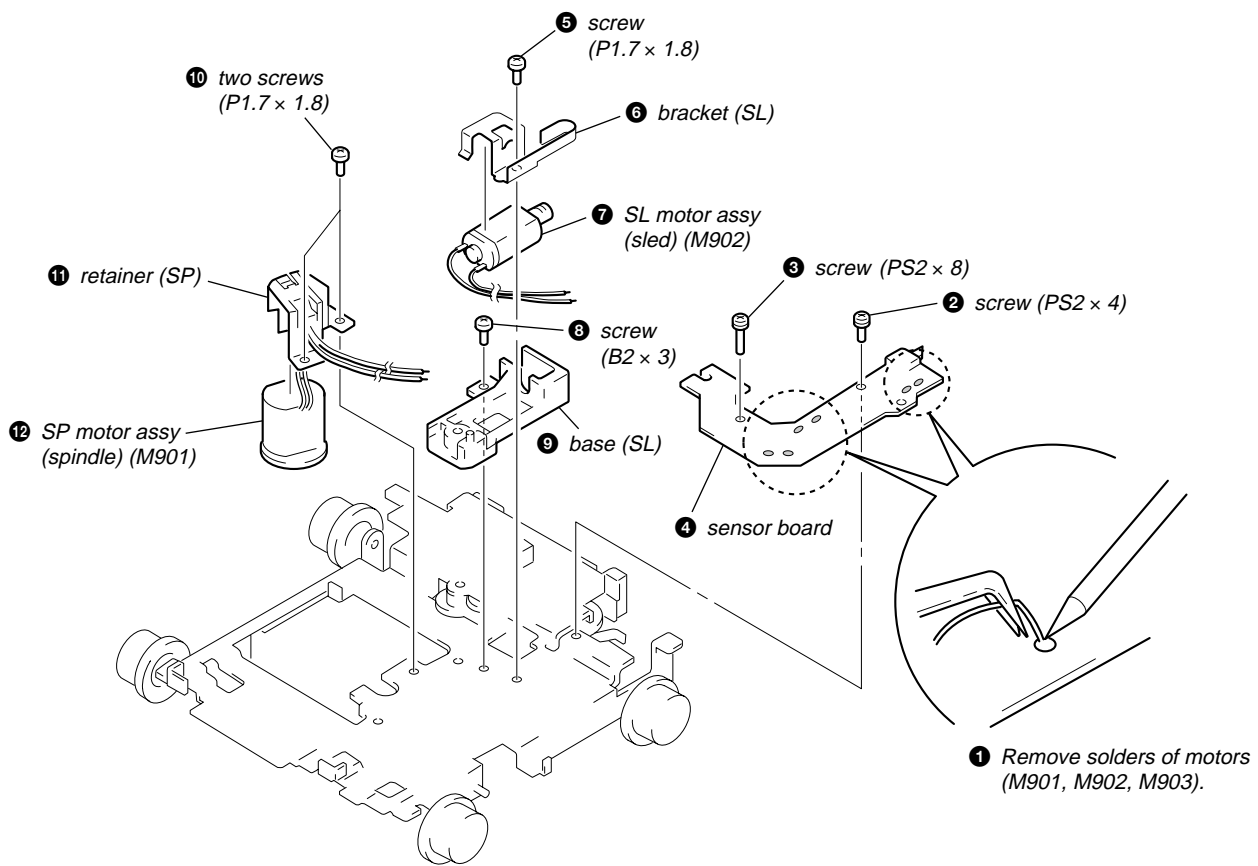
### 3-10. CHUCKING ARM ASSY



### 3-11. OPTICAL PICK-UP (KMS-242E)



3-12. SL MOTOR ASSY (SLED) (M902), SP MOTOR ASSY (SPINDLE) (M901)



## SECTION 4

### ELECTRICAL ADJUSTMENTS

#### TEST MODE

This set have the test mode function.

<Set the Test Mode>

1. Turn ON the regulated power supply. (The clock is displayed)

**Note:** Press the **OFF** button, if the clock is not displayed.

2. Push the preset **4** button.
3. Push the preset **5** button.
4. Press the preset **1** button for more than two seconds.
5. Then the display indicates all lights, the test mode is set.

<Release the Test mode>

1. Push the **OFF** button.

#### MD SECTION

MD section adjustments are done automatically in this set.

#### TUNER SECTION

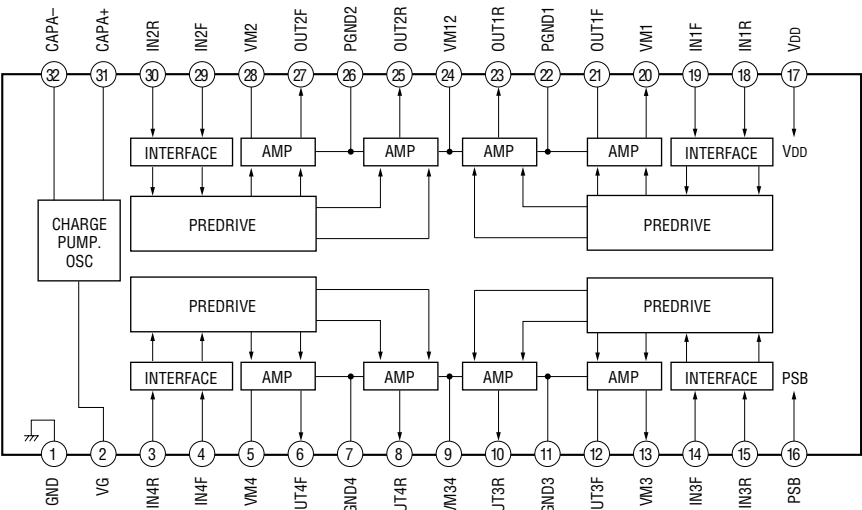
Tuner section adjustments are done automatically in this set.

IC1 CXA2523AR

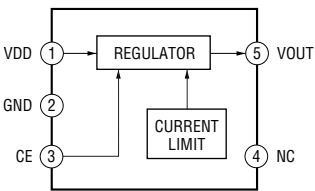




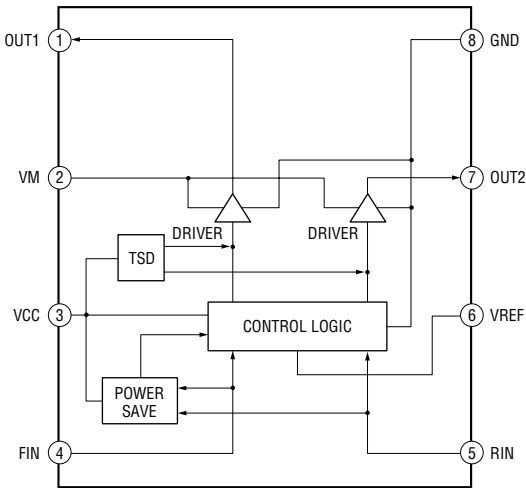
IC2 BH6519FS-E2

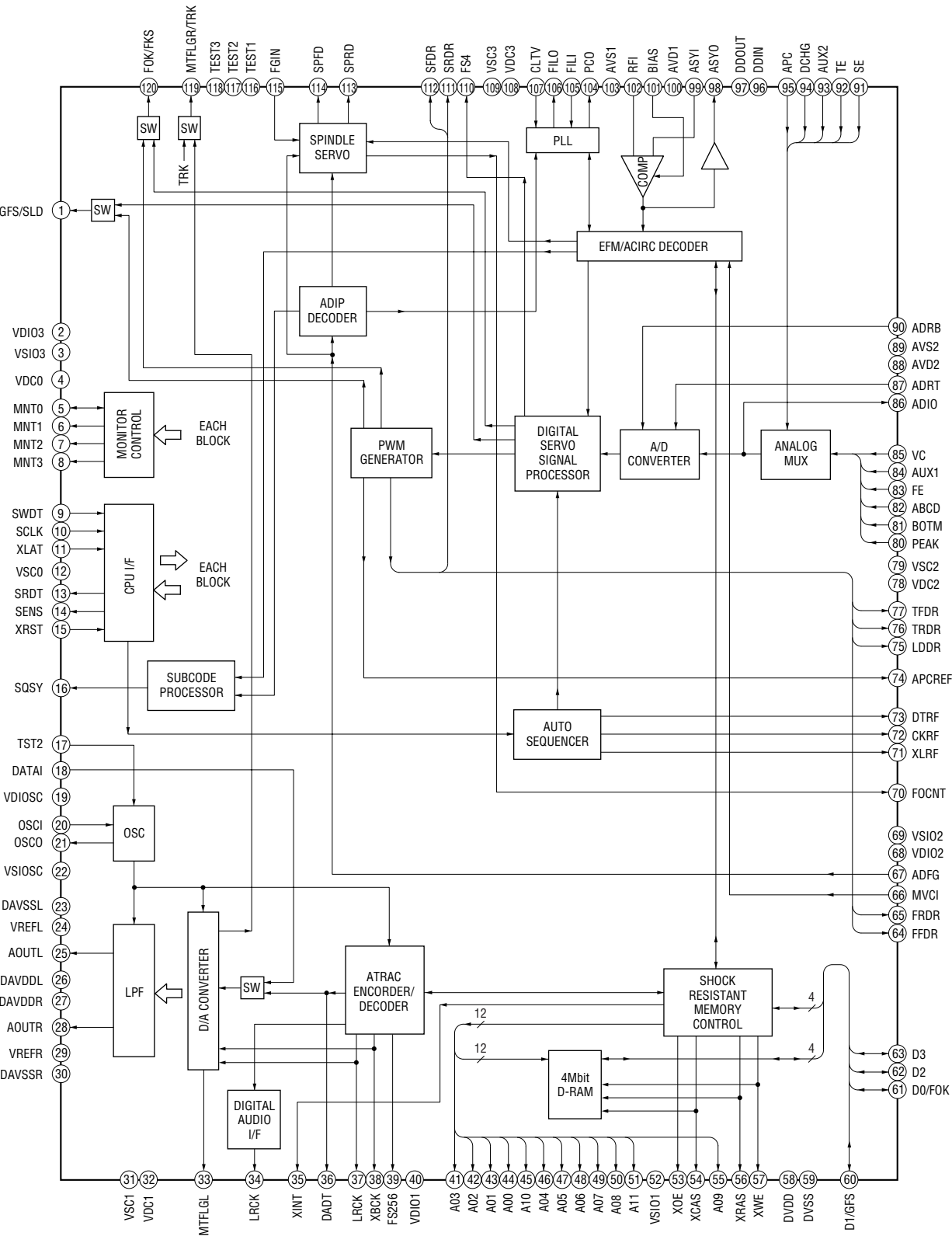


IC3 R1114N251D-TR-FA



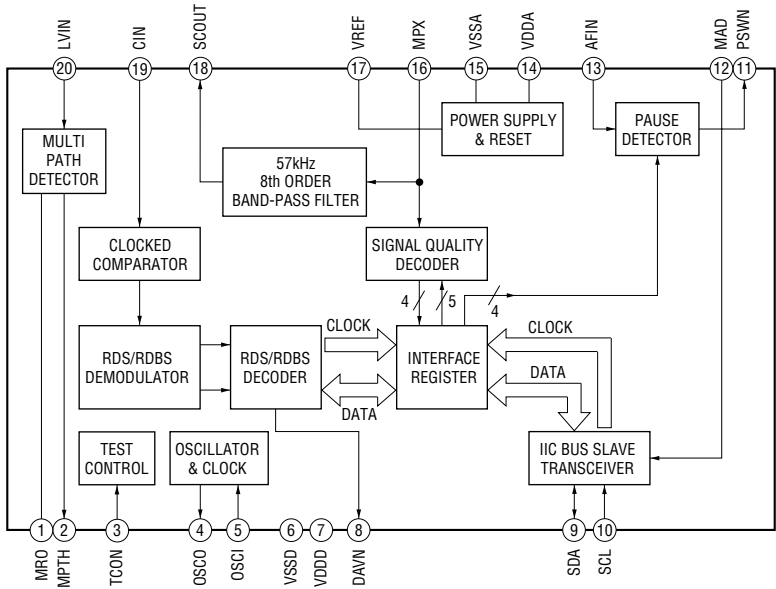
IC6 BA6287F



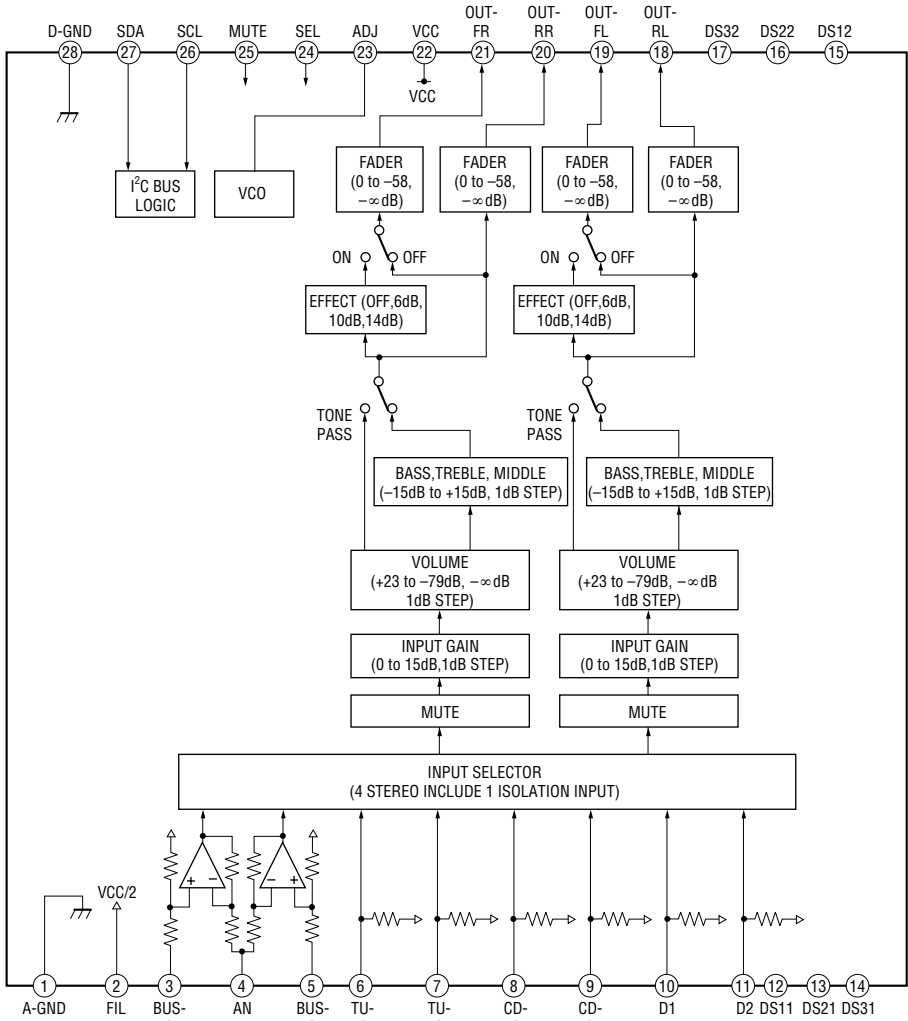


– MAIN Board –

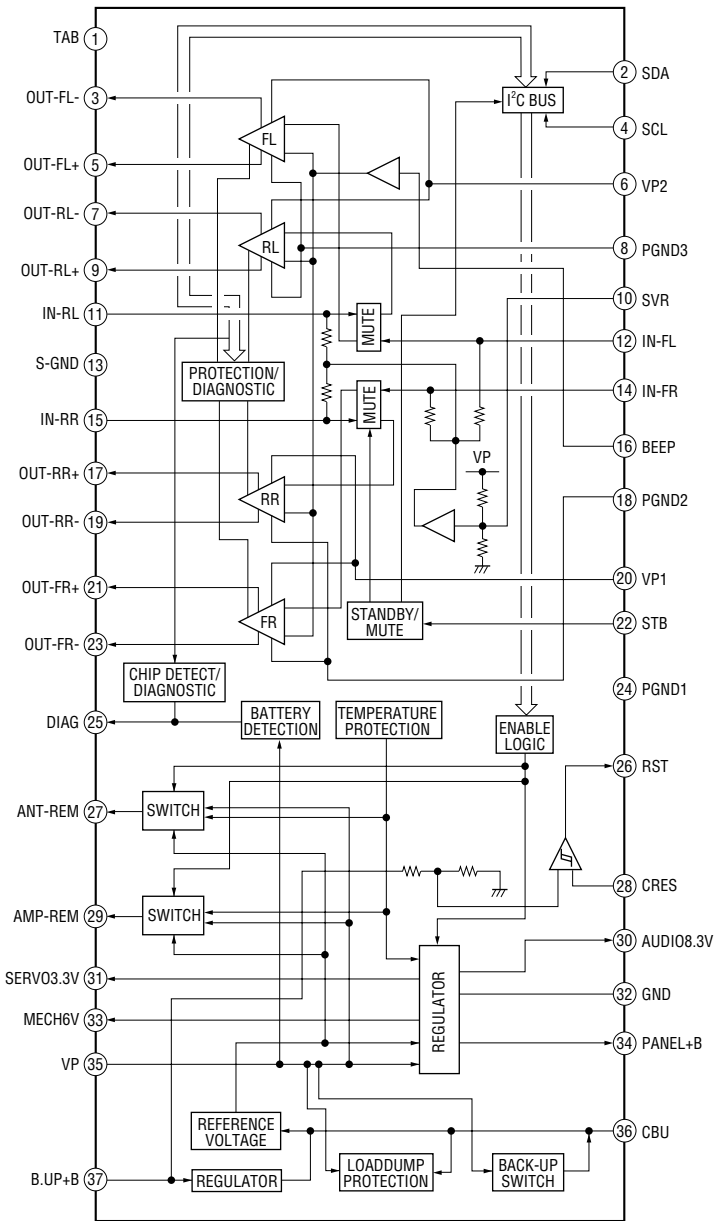
IC90 SAA6588T/V2-518



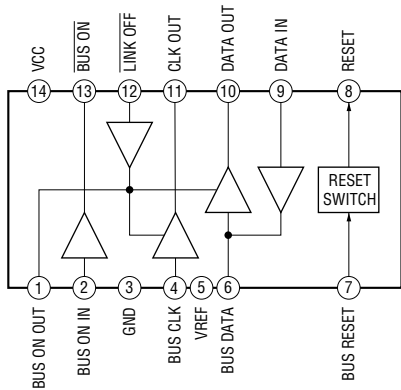
IC120 BD3802F-FE2



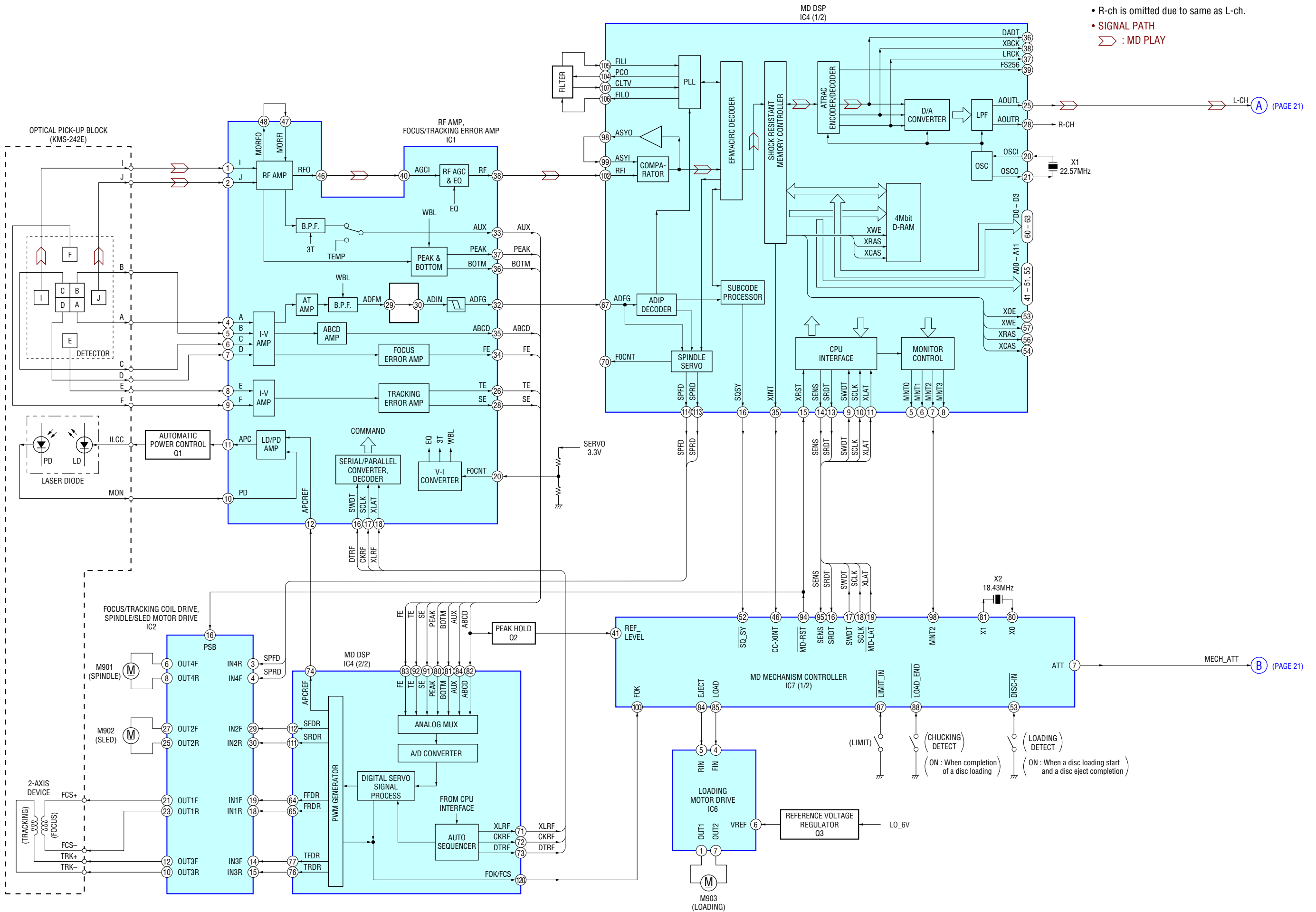
IC300 TDA8588AJ/N1



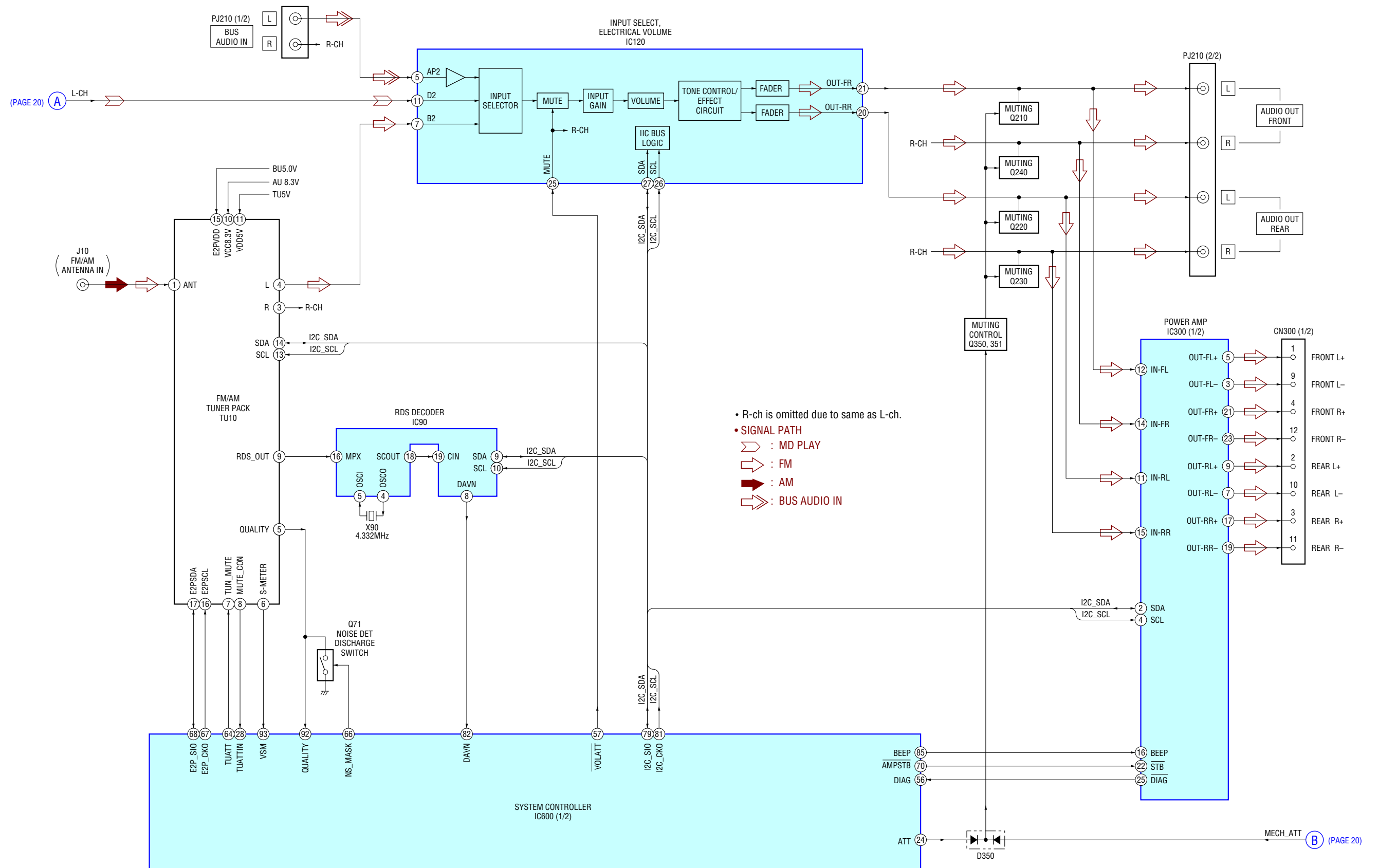
IC400 BA8271F-E2



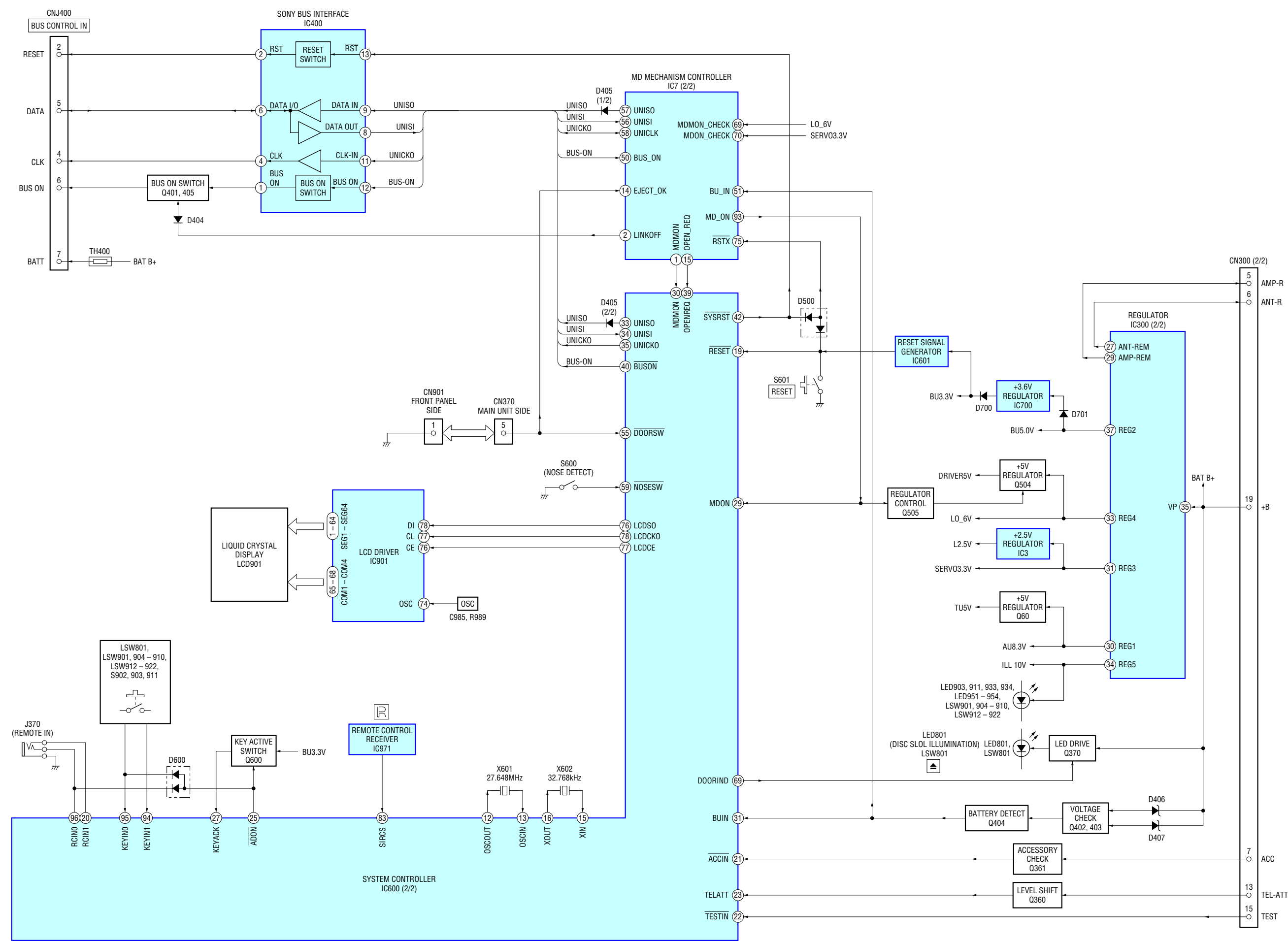
### 5-1. BLOCK DIAGRAM – SERVO Section –



## 5-2. BLOCK DIAGRAM – MAIN Section –



5-3. BLOCK DIAGRAM – PANEL/BUS CONTROL/POWER SUPPLY Section –



5-4. NOTE FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

**Note on Printed Wiring Board:**

- : parts extracted from the component side.
- : parts extracted from the conductor side.
- : Pattern from the side which enables seeing.  
(The other layers' patterns are not indicated.)

Caution:

Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

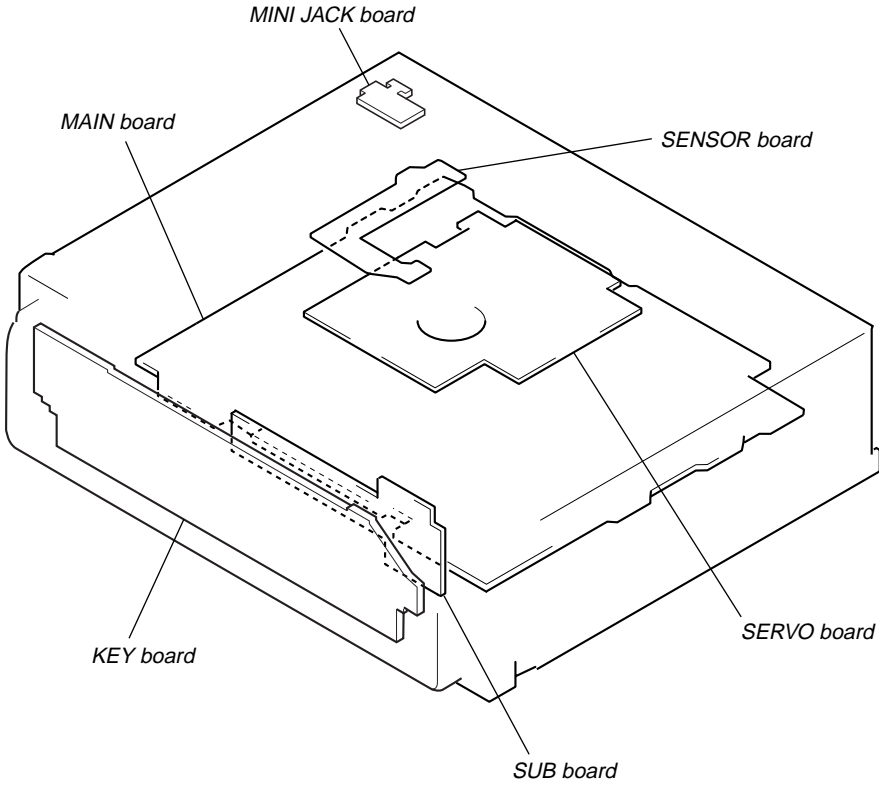
**Note on Schematic Diagram:**

- All capacitors are in  $\mu\text{F}$  unless otherwise noted.  $\text{pF}$ :  $\mu\mu\text{F}$  50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in  $\Omega$  and  $\frac{1}{4}\text{W}$  or less unless otherwise specified.
- $\Delta$  : internal component.
- $\square$  : panel designation.

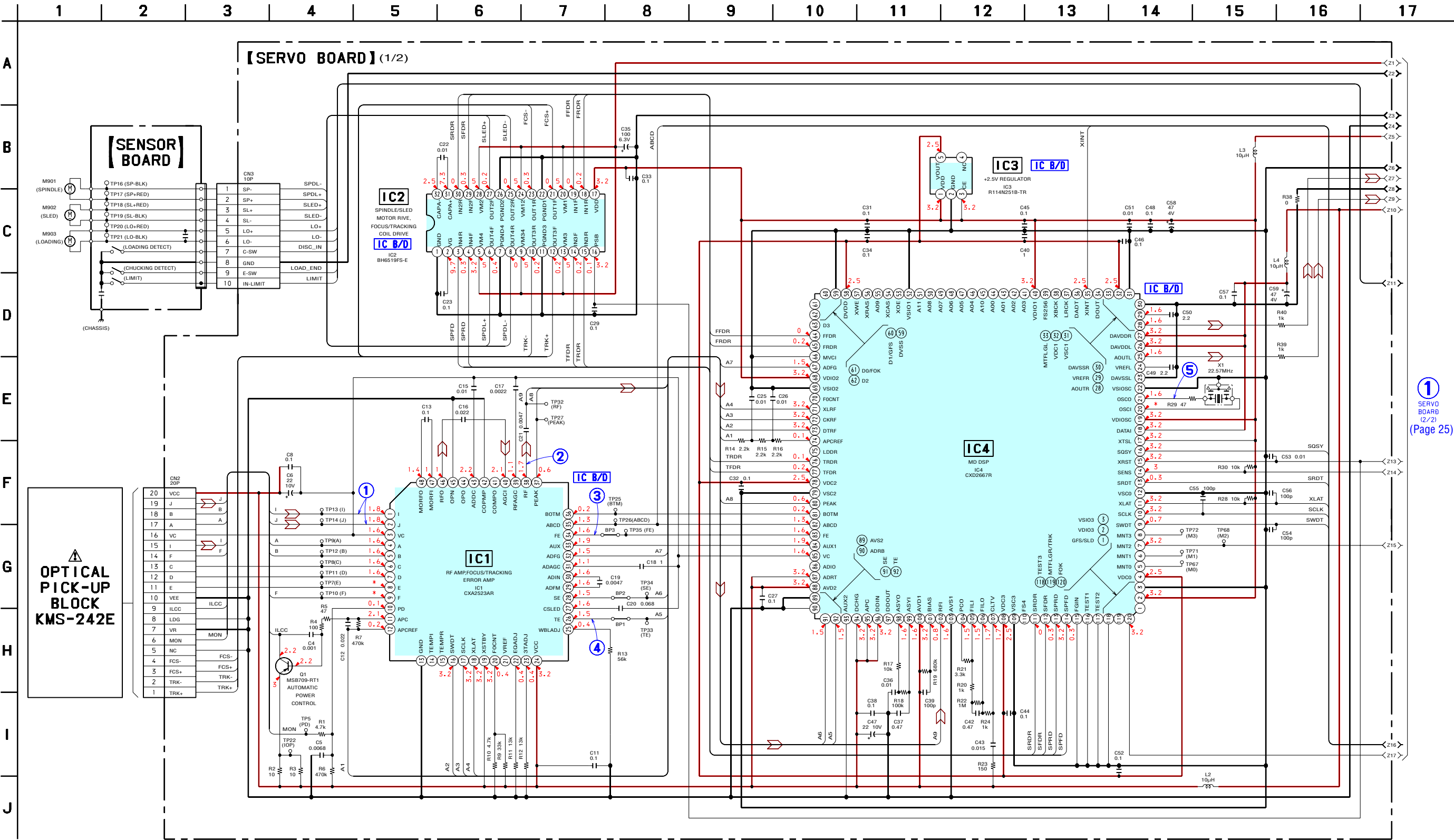
**Note:** The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety.  
Replace only with part number specified.

- : B+ Line.
- Power voltage is dc 14.4V and fed with regulated dc power supply from ACC and BATT cords.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  - SERVO Section —  
no mark : MD PLAY
  - MAIN/KEY Section —  
no mark : FM
  - $\langle \rangle$  : MW
  - $[ ]$  : LW
  - $( )$  : MD PLAY
- Voltages are taken with a VOM (Input impedance 10 M $\Omega$ ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  - $\Sigma$  : MD PLAY
  - $\square$  : FM
  - $\blacksquare$  : AM (MW/LW)
  - $\Rightarrow$  : BUS AUDIO IN

• Circuit Boards Location

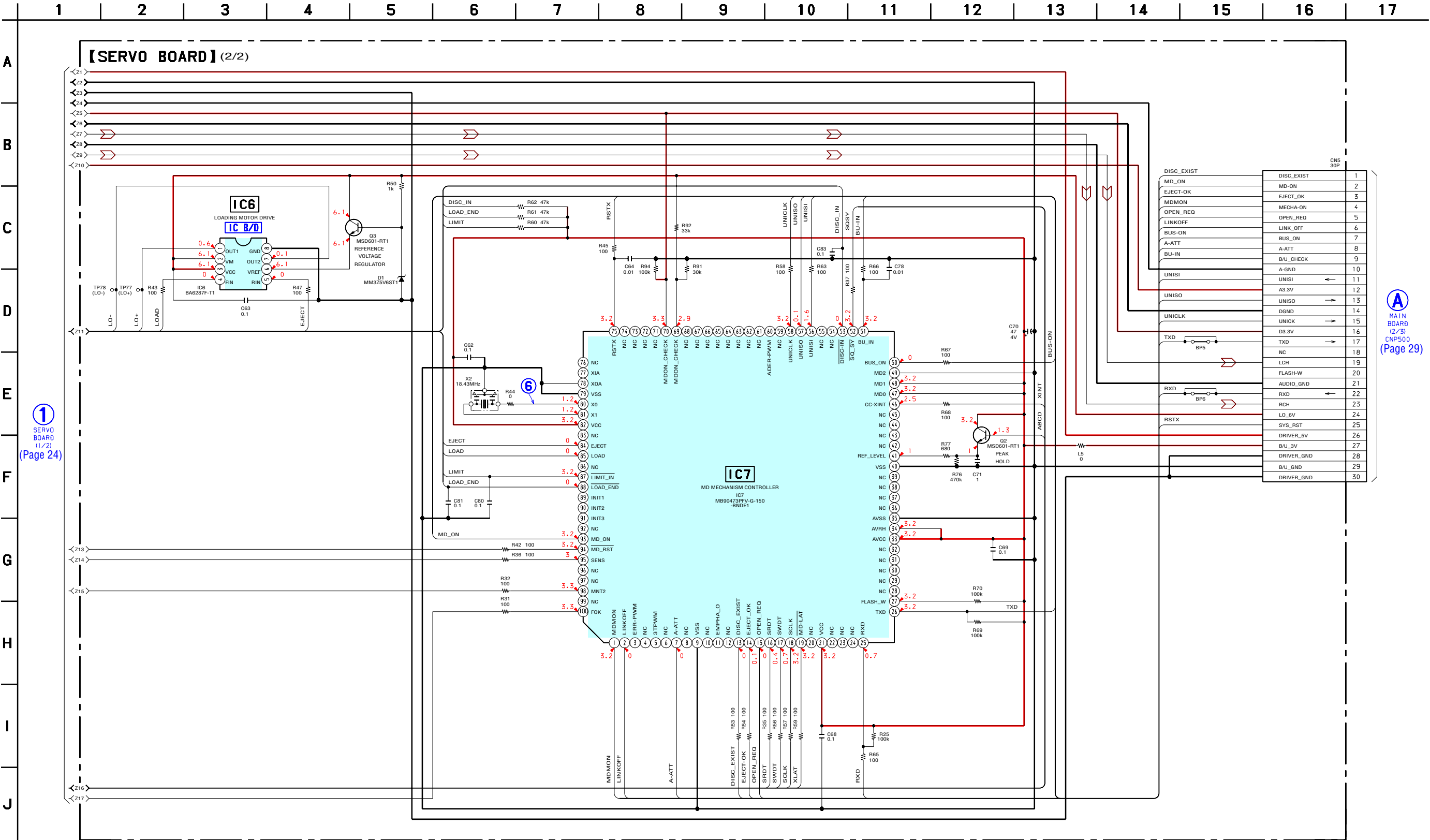


5-5. SCHEMATIC DIAGRAM – SERVO Section (1/2) – • See page 31 for Waveforms. • See page 16 for IC Block Diagrams.





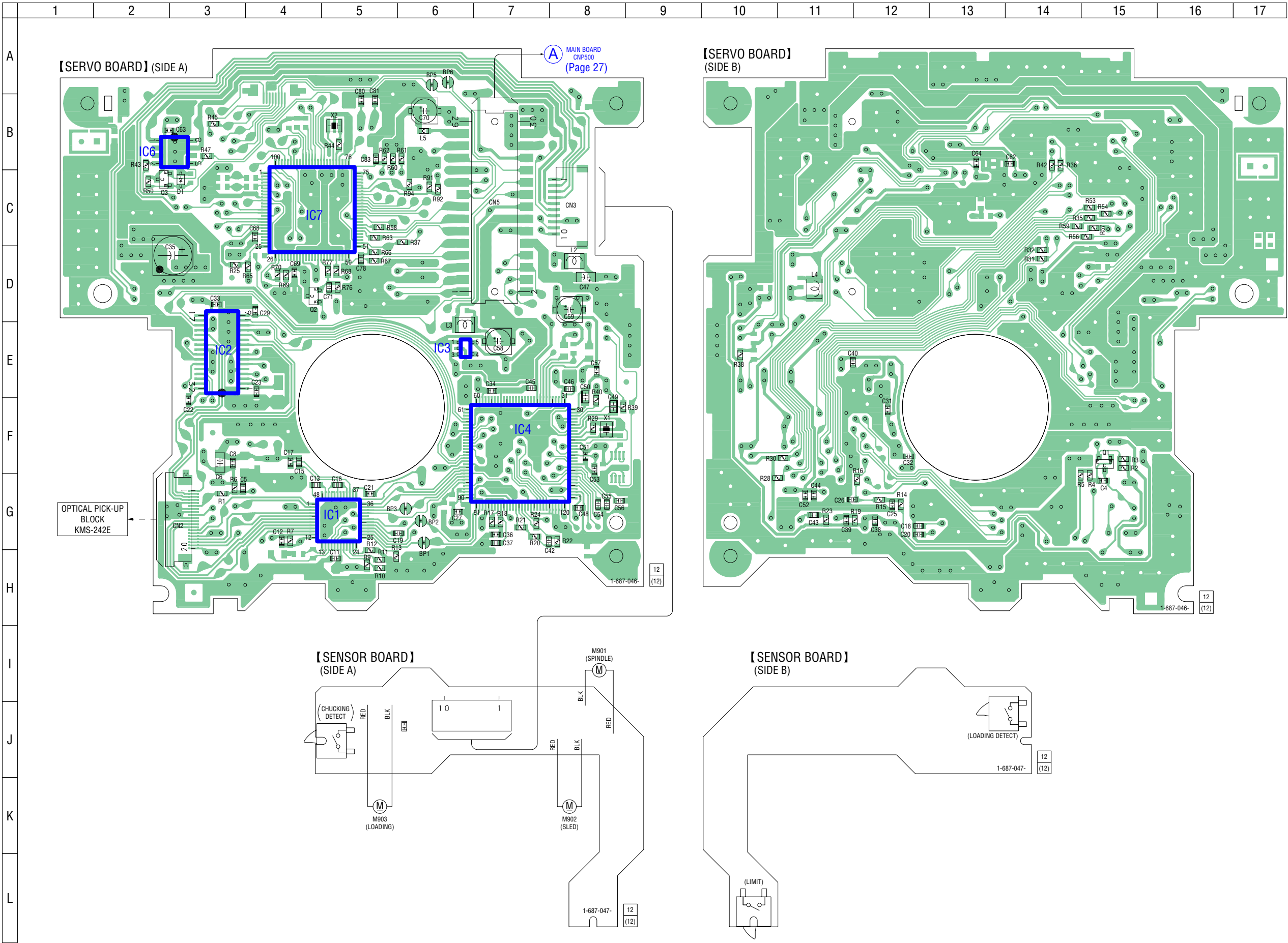
5-6. SCHEMATIC DIAGRAM – SERVO Section (2/2) – • See page 31 for Waveform. • See page 16 for IC Block Diagram.

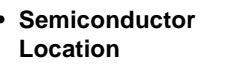


5-7. PRINTED WIRING BOARDS – SERVO Section – • See page 23 for Circuit Boards Location.

• Semiconductor Location

Ref. No.	Location
D1	C-3
IC1	G-5
IC2	E-3
IC3	E-6
IC4	F-7
IC6	B-3
IC7	C-4
Q1	F-15
Q2	D-4
Q3	C-2

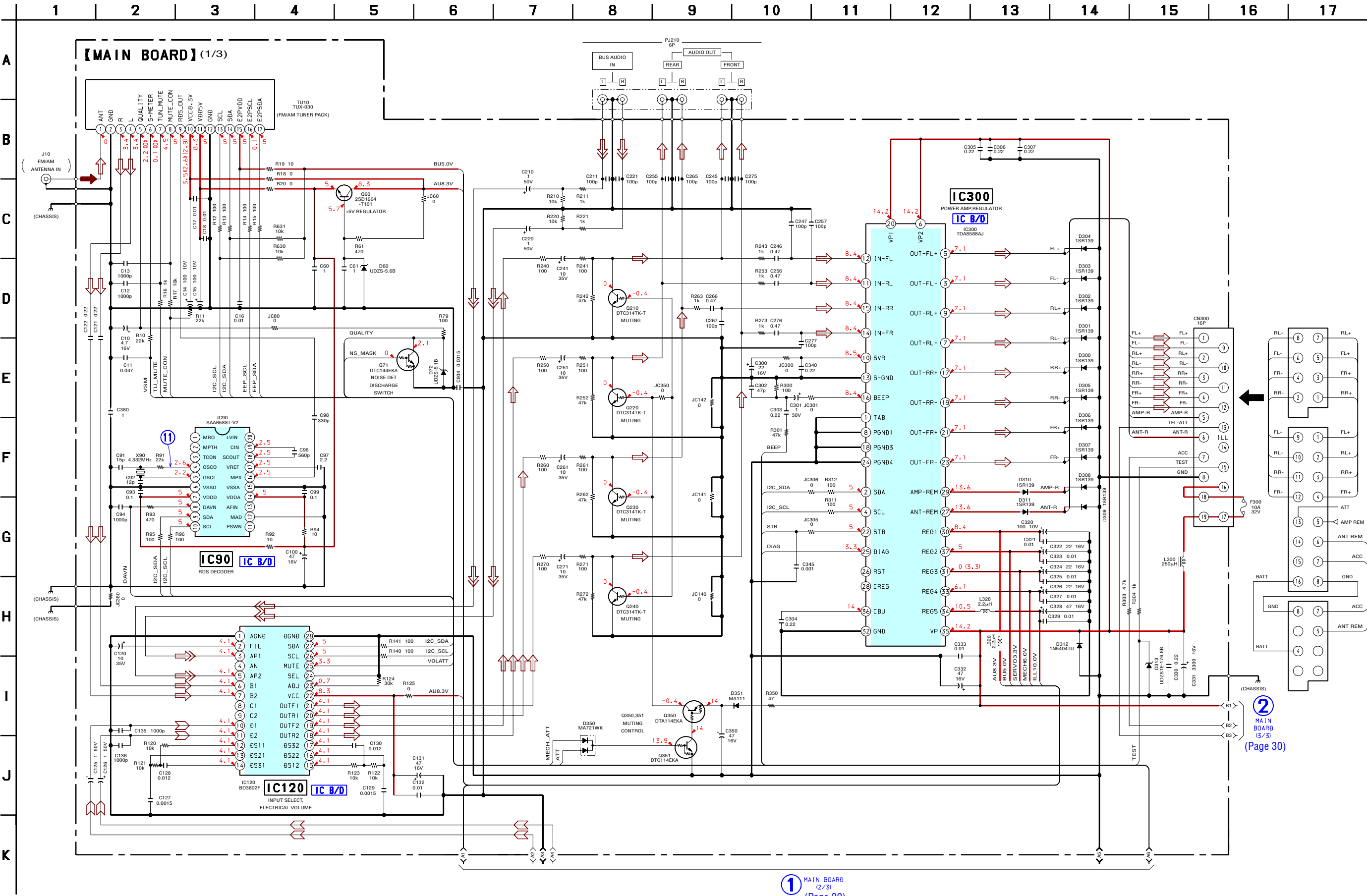




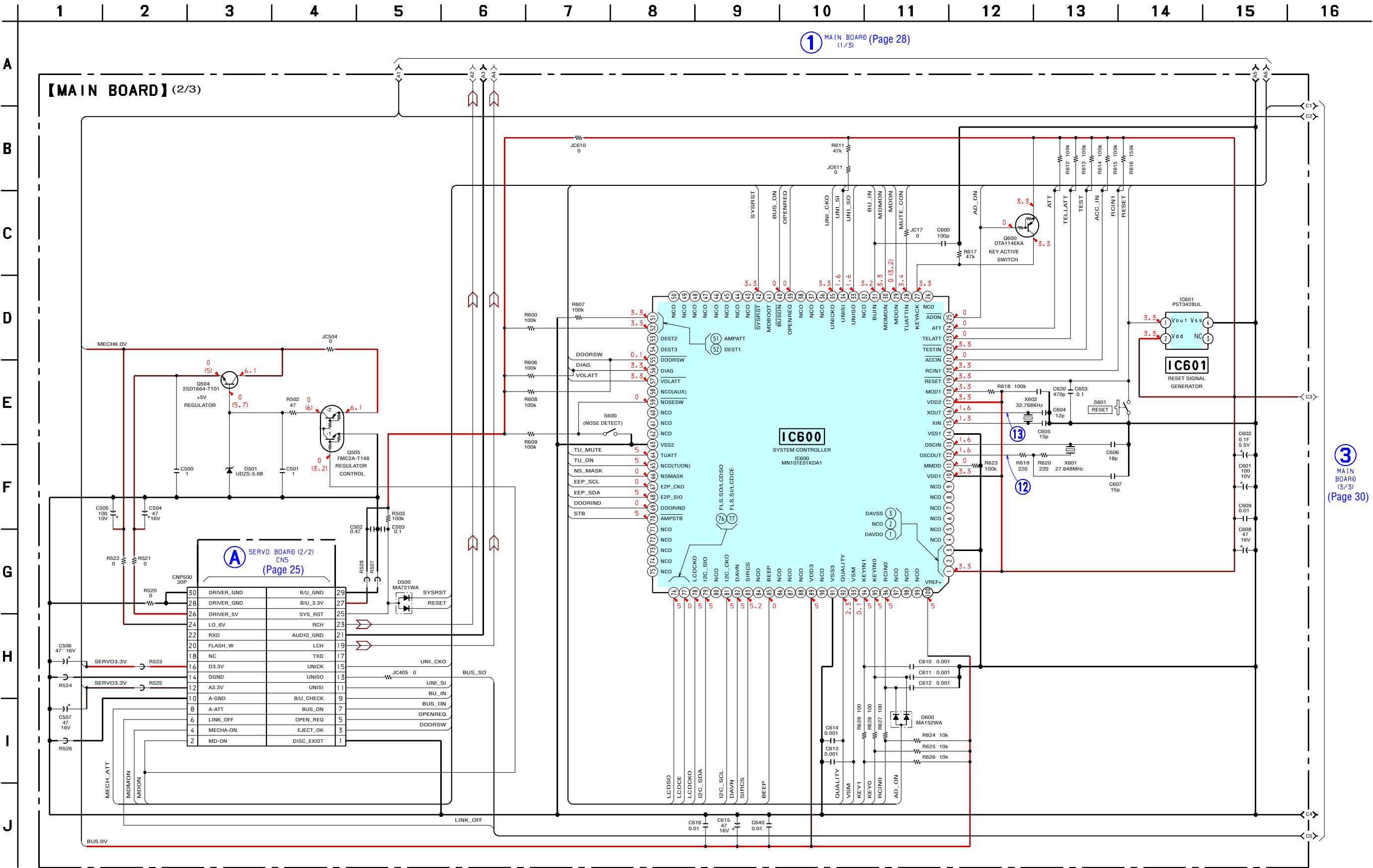
Ref. No.	Location
D60	I-3
D72	F-3
D300	E-9
D301	E-10
D302	E-9
D303	E-10
D304	E-10
D305	E-9
D306	D-8
D307	D-8
D308	E-11
D309	E-12
D310	E-11
D311	E-11
D312	E-13
D313	D-12
D350	J-12
D351	E-8
D360	D-12
D363	E-12
D370	M-4
D371	L-4
D372	M-4
D373	M-3
D375	F-14
D401	J-14
D402	K-14
D403	J-14
D404	H-12
D405	I-11
D406	G-13
D407	G-13
D500	H-10
D501	G-12
D600	L-8
D700	H-9
D701	G-9
IC90	J-3
IC120	G-6
IC300	C-8
IC400	L-14
IC600	J-9
IC601	K-12
IC700	H-8
Q60	H-4
Q71	F-3
Q210	C-5
Q220	D-5
Q230	C-5
Q240	D-5
Q350	F-8
Q351	F-8
Q360	I-13
Q361	G-14
Q370	K-4
Q401	J-15
Q402	H-13
Q403	H-13
Q404	I-13
Q405	H-12
Q504	G-12
Q505	H-13
Q600	I-12



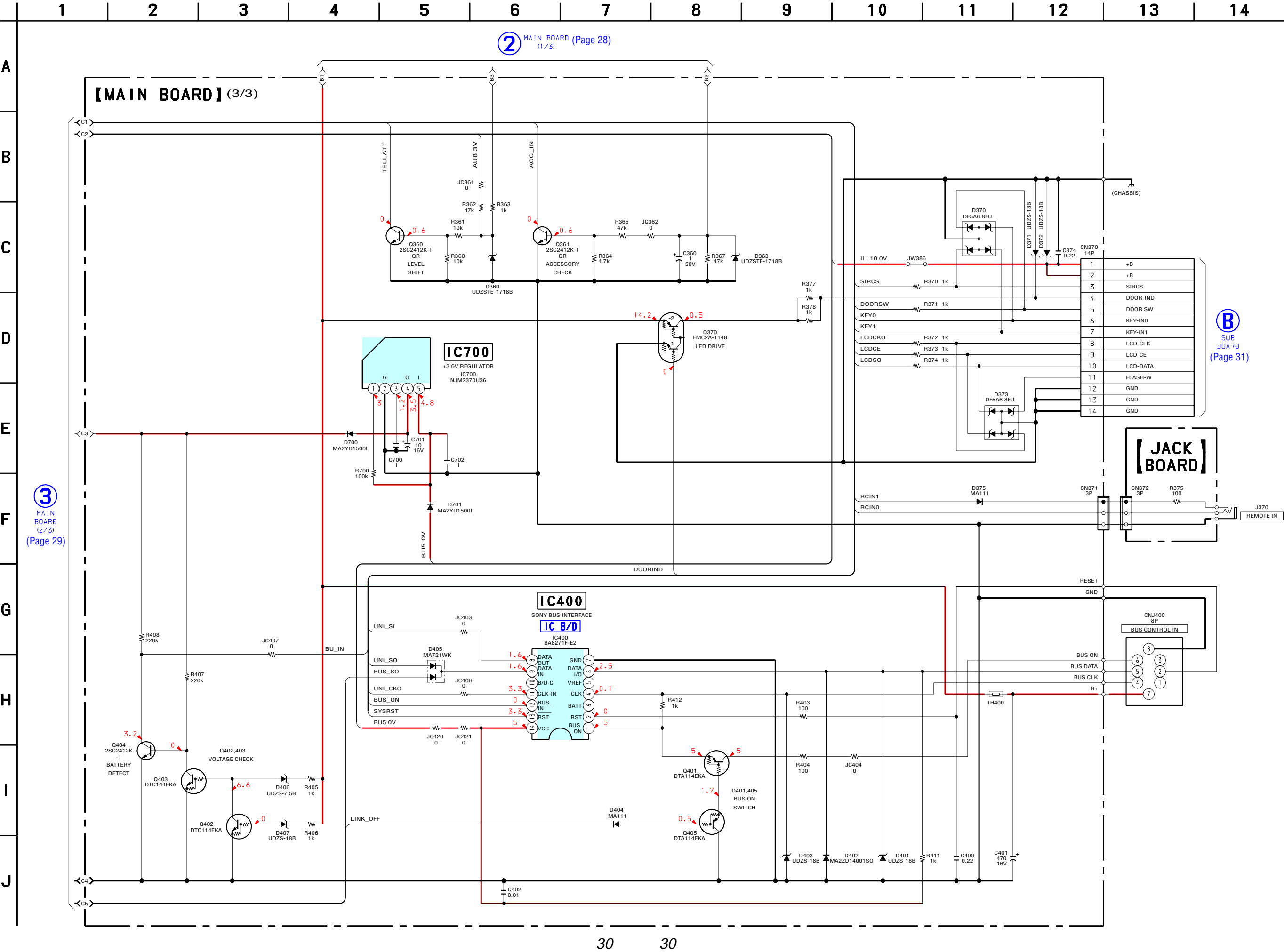
5-9. SCHEMATIC DIAGRAM – MAIN Section (1/3) – • See page 31 for Waveform. • See page 16 for IC Block Diagrams.



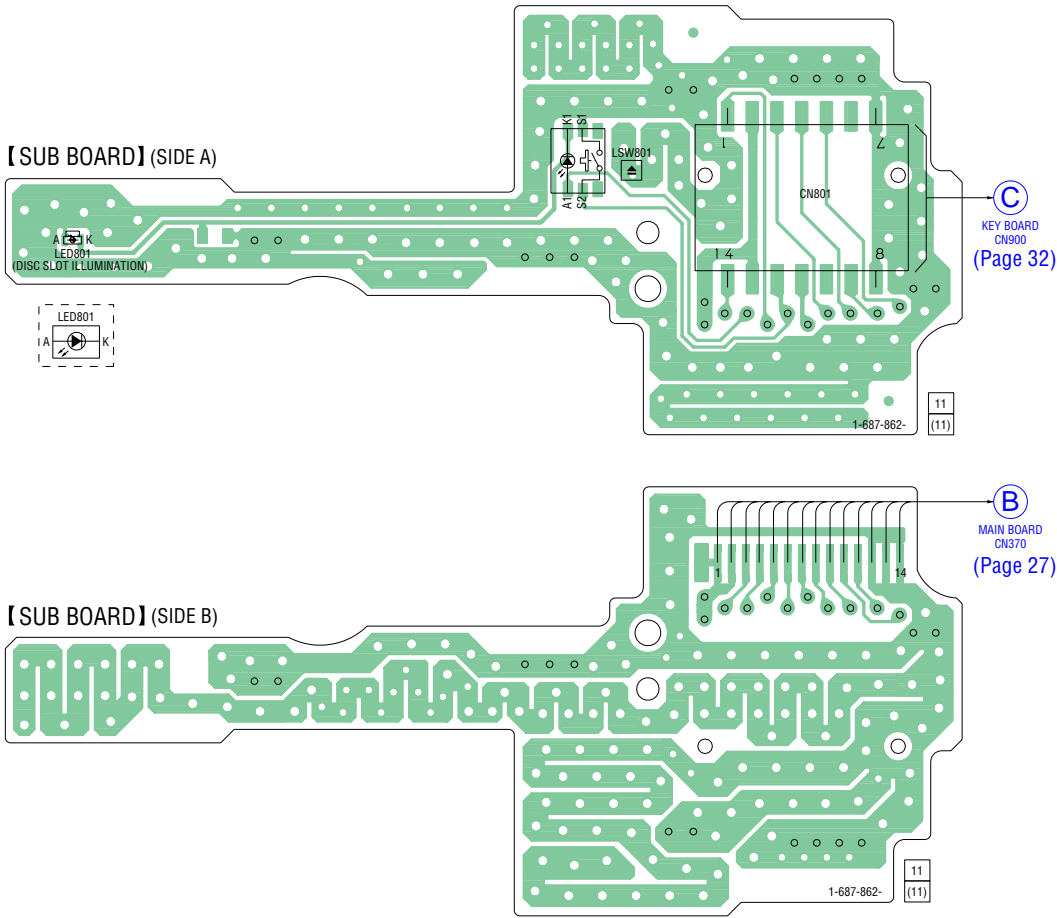
5-10. SCHEMATIC DIAGRAM – MAIN Section (2/3) – • See page 31 for Waveforms.



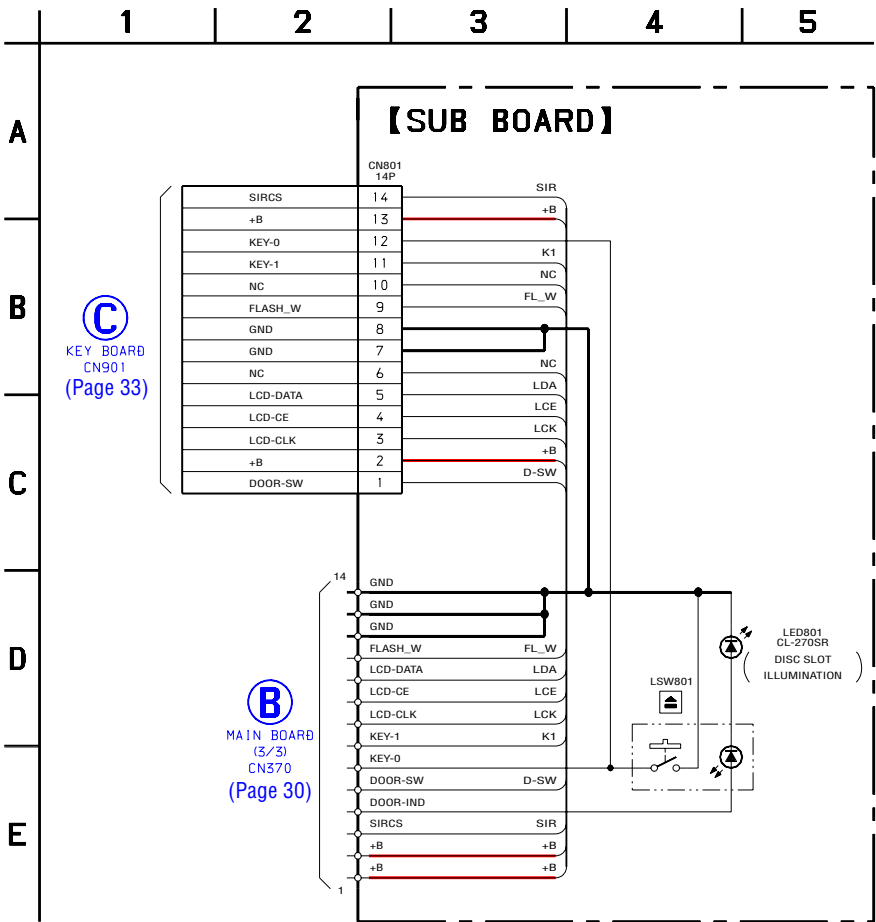
5-11. SCHEMATIC DIAGRAM – MAIN Section (3/3) – • See page 16 for IC Block Diagram.



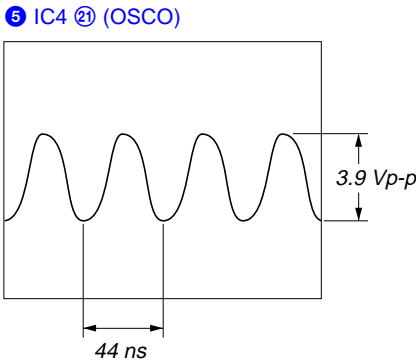
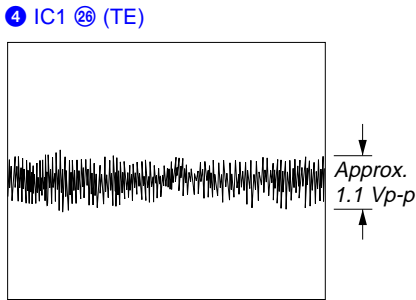
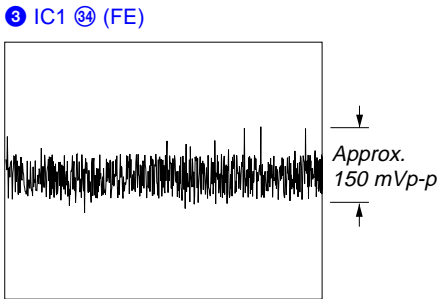
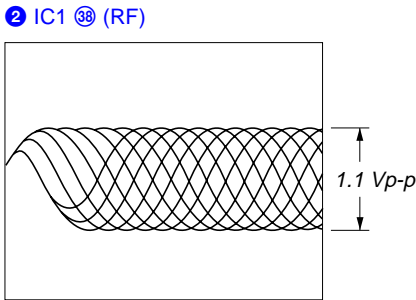
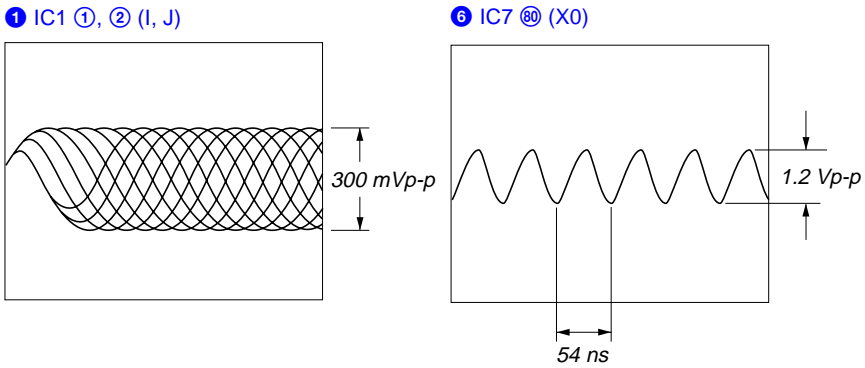
5-12. PRINTED WIRING BOARD – SUB Section – • See page 23 for Circuit Boards Location.



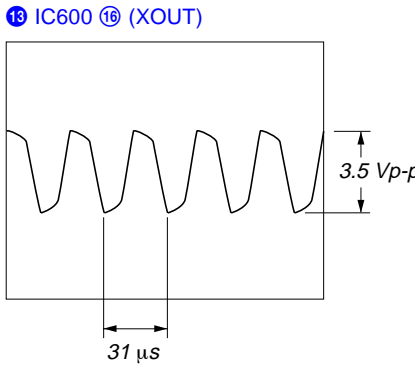
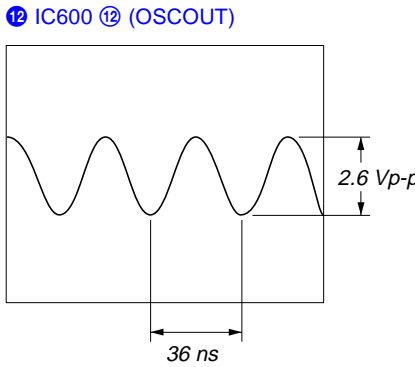
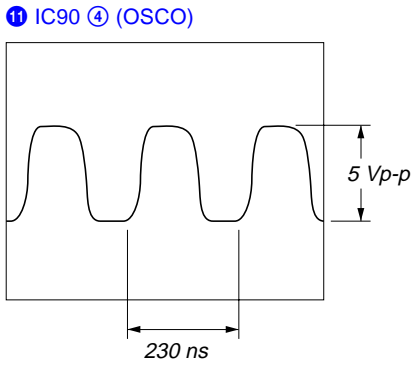
5-13. SCHEMATIC DIAGRAM – SUB Section –



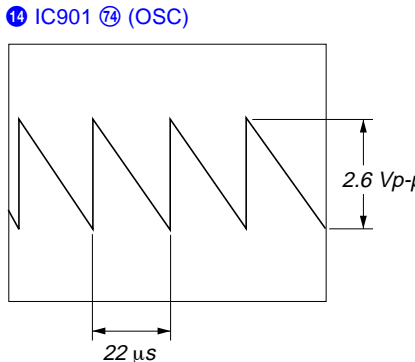
• Waveforms  
– SERVO Board –



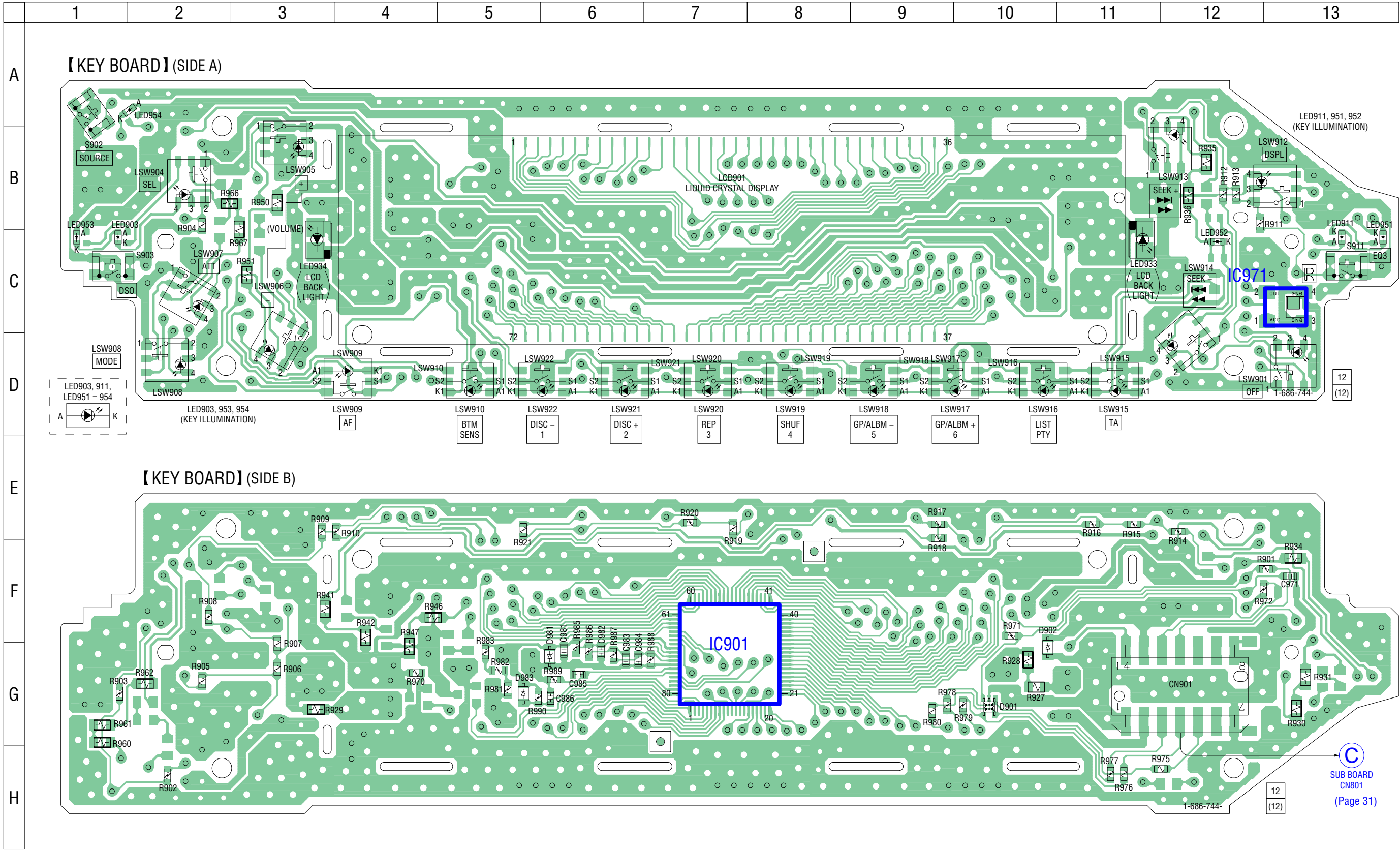
– MAIN Board –



– KEY Board –



5-14. PRINTED WIRING BOARD – KEY Section – • See page 23 for Circuit Boards Location.

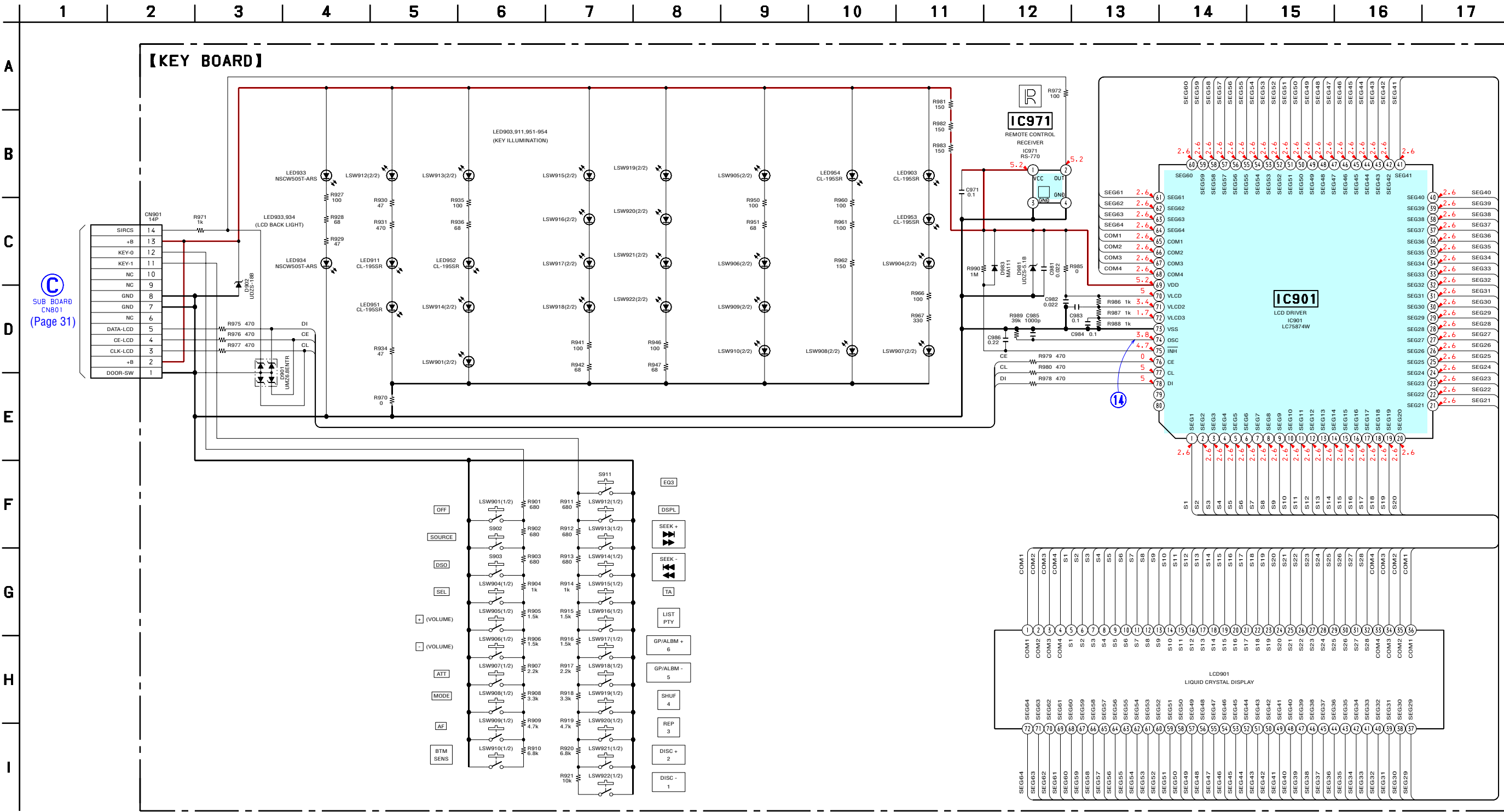


• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D901	G-10	LED903	C-1
D902	G-10	LED911	C-13
D981	G-6	LED933	C-11
D983	G-5	LED934	C-3
		LED951	C-13
IC901	G-7	LED952	C-12
IC971	C-13	LED953	C-1
		LED954	A-2



5-15. SCHEMATIC DIAGRAM – KEY Section – • See page 31 for Waveform.



5-16. IC PIN FUNCTION DESCRIPTION

• SERVO BOARD IC1 CXA2523AR (RF AMP, FOCUS/TRACKING ERROR AMP)

Pin No.	Pin Name	I/O	Description
1	I	I	I-V converted RF signal I input from the optical pick-up block detector
2	J	I	I-V converted RF signal J input from the optical pick-up block detector
3	VC	O	Middle point voltage (+1.65V) generation output terminal
4 to 9	A to F	I	Signal input from the optical pick-up detector
10	PD	I	Light amount monitor input from the optical pick-up block laser diode
11	APC	O	Laser amplifier output terminal to the automatic power control circuit
12	APCREF	I	Reference voltage input terminal for setting laser power
13	GND	—	Ground terminal
14	TEMPI	I	Connected to the temperature sensor Not used
15	TEMPR	O	Output terminal for a temperature sensor reference voltage Not used
16	SWDT	I	Writing serial data input from the MD DSP
17	SCLK	I	Serial data transfer clock signal input from the MD DSP
18	XLAT	I	Serial data latch pulse signal input from the MD DSP
19	XSTBY	I	Standby signal input terminal “L”: standby (fixed at “H” in this set)
20	FOCNT	I	Center frequency control voltage input terminal of internal circuit (BPF22, BPF3T, EQ) input terminal
21	VREF	O	Reference voltage output terminal Not used
22	EQADJ	I	Center frequency setting terminal for the internal circuit (EQ)
23	3TADJ	I	Center frequency setting terminal for the internal circuit (BPF3T)
24	VCC	—	Power supply terminal (+3.3V)
25	WBLADJ	I	Center frequency setting terminal for the internal circuit (BPF22)
26	TE	O	Tracking error signal output terminal
27	CSLED	I	Connected to the external capacitor for low-pass filter of the sled error signal
28	SE	O	Sled error signal output terminal
29	ADFM	O	FM signal output of the ADIP
30	ADIN	I	Receives a ADIP FM signal in AC coupling
31	ADAGC	I	Connected to the external capacitor for ADIP AGC
32	ADFG	O	ADIP duplex signal (22.05 kHz ± 1 kHz) output terminal
33	AUX	O	Auxiliary signal (I <sub>3</sub> signal/temperature signal) output terminal
34	FE	O	Focus error signal output terminal
35	ABCD	O	Light amount signal (ABCD) output terminal
36	BOTM	O	Light amount signal (RF/ABCD) bottom hold output terminal
37	PEAK	O	Light amount signal (RF/ABCD) peak hold output terminal
38	RF	O	Playback EFM RF signal output terminal
39	RFAGC	I	Connected to the external capacitor for RF auto gain control circuit
40	AGCI	I	Receives a RF signal in AC coupling
41	COMPO	O	User comparator output terminal Not used
42	COMPP	I	User comparator input terminal Not used
43	ADDC	I	Connected to the external capacitor for cutting the low band of the ADIP amplifier
44	OPO	O	User operational amplifier output terminal Not used
45	OPN	I	User operational amplifier inversion input terminal Not used
46	RFO	O	RF signal output
47	MORFI	I	Receives a MO RF signal in AC coupling
48	MORFO	O	MO RF signal output

• SERVO BOARD IC4 CXD2667R (MD DSP)

Pin No.	Pin Name	I/O	Description
1	GFS/SLD	O	GFS output or sled servo drive signal output terminal Not used
2	VDIO3	—	Power supply terminal (+3.3V)
3	VSIO3	—	Ground terminal
4	VDC0	—	Power supply terminal (+2.5V)
5	MNT0	I/O	Busy monitor signal input or output terminal Not used
6	MNT1	O	Busy monitor signal output terminal Not used
7	MNT2	O	Busy monitor signal output to the MD mechanism controller (reserve terminal)
8	MNT3	O	Busy monitor signal output terminal Not used
9	SWDT	I	Writing serial data input from the MD mechanism controller
10	SCLK	I	Serial data transfer clock signal input from the MD mechanism controller
11	XLAT	I	Serial data latch pulse input from the MD mechanism controller
12	VSC0	—	Ground terminal
13	SRDT	O	Reading serial data output to the MD mechanism controller
14	SENS	O	Internal status (SENSE) output to the MD mechanism controller
15	XRST	I	System reset signal input from the MD mechanism controller “L”: reset
16	SQSY	O	Subcode Q sync (SCOR) output to the MD mechanism controller “L” is output every 13.3 msec Almost all, “H” is output
17	XTSL	I	Frequency setting terminal for the system clock “L”: 45.1584 MHz, “H”: 22.5792 MHz (fixed at “H” in this set)
18	DATAI	I	Digital audio signal input terminal when recording mode Not used
19	VDIOSC	O	Power supply terminal (+3.3V)
20	OSCI	I	System clock input terminal (22.57 MHz)
21	OSCO	O	System clock output terminal (22.57 MHz)
22	VSIOSC	—	Ground terminal
23	DAVSSL	—	Ground terminal
24	VREFL	O	Capacitor connecting terminal for reference voltage of internal D/A converter
25	AOUTL	O	L-ch analog audio signal output terminal
26	DAVDDL	—	Power supply terminal (+3.3V)
27	DAVDDR	—	Power supply terminal (+3.3V)
28	AOUTR	O	R-ch analog audio signal output terminal
29	VREFR	O	Capacitor connecting terminal for reference voltage of internal D/A converter
30	DAVSSR	—	Ground terminal
31	VSC1	—	Ground terminal
32	VDC1	—	Power supply terminal (+2.5V)
33	MTFLGL	O	L-ch zero-data or L-ch + R-ch zero-data detection flag output terminal Not used
34	DOUT	O	Digital audio signal output terminal when playback mode Not used
35	XINT	O	Interrupt request signal output to the MD mechanism controller
36	DADT	O	Playback data output to the D/A converter Not used
37	LRCK	O	L/R sampling clock signal (44.1 kHz) output to the D/A converter Not used
38	XBCK	O	Bit clock signal (2.8224 MHz) output to the D/A converter Not used
39	FS256	O	256Fs = 11.2896 MHz clock signal output terminal Not used
40	VDIO1	—	Power supply terminal (+3.3V)
41 to 44	A03 to A00	O	Address signal output terminal Not used
45	A10	O	Address signal output terminal Not used
46 to 50	A04 to A08	O	Address signal output terminal Not used

Pin No.	Pin Name	I/O	Description
51	A11	O	Address signal output terminal Not used
52	VSIO1	—	Ground terminal
53	XOE	O	Output enable signal output terminal Not used
54	XCAS	O	Column address strobe signal output terminal Not used
55	A09	O	Address signal output terminal Not used
56	XRAS	O	Row address strobe signal output terminal Not used
57	XWE	O	Write enable signal output terminal Not used
58	DVDD	—	Power supply terminal (+3.3V)
59	DVSS	—	Ground terminal
60	D1/GFS	I/O	Two-way data bus or GFS output terminal Not used
61	D0/FOK	I/O	Two-way data bus or focus OK signal output terminal Not used
62, 63	D2, D3	I/O	Two-way data bus terminal Not used
64	FFDR	O	Focus servo drive PWM signal (+) output terminal
65	FRDR	O	Focus servo drive PWM signal (–) output terminal
66	MVCI	I	Digital in PLL oscillation input from the external VCO Not used
67	ADFG	I	ADIP duplex FM signal (22.05 kHz $\pm$ 1 kHz) input terminal
68	VDIO2	—	Power supply terminal (+3.3V)
69	VSIO2	—	Ground terminal
70	F0CNT	O	Filter cut-off control signal output terminal Not used
71	XLRF	O	Serial data latch pulse signal output to the RF AMP
72	CKRF	O	Serial data transfer clock signal output to the RF AMP
73	DTRF	O	Two-way data bus with the RF AMP
74	APCREF	O	Control signal output to the reference voltage generator circuit for the laser automatic power control
75	LDDR	O	PWM signal output for laser automatic power control Not used
76	TRDR	O	Tracking servo drive PWM signal (–) output terminal
77	TFDR	O	Tracking servo drive PWM signal (+) output terminal
78	VDC2	—	Power supply terminal (+2.5V)
79	VSC2	—	Ground terminal
80	PEAK	I	Light amount signal (RF/ABCD) peak hold input terminal
81	BOTM	I	Light amount signal (RF/ABCD) bottom hold input terminal
82	ABCD	I	Light amount signal (ABCD) input terminal
83	FE	I	Focus error signal input terminal
84	AUX1	I	Auxiliary signal (I3 signal/temperature signal) input terminal
85	VC	I	Middle point voltage (+1.65V) input terminal
86	ADIO	O	Monitor output of the A/D converter input signal Not used (open)
87	ADRT	I	A/D converter operational range upper limit voltage input terminal (fixed at “H” in this set)
88	AVD2	—	Power supply terminal (+3.3V)
89	AVS2	—	Ground terminal
90	ADRB	I	A/D converter operational range lower limit voltage input terminal (fixed at “L” in this set)
91	SE	I	Sled error signal input terminal
92	TE	I	Tracking error signal input terminal
93	AUX2	I	Auxiliary signal (I3 signal/temperature signal) input terminal Not used
94	DCHG	I	Connected to the +3.3V power supply in this set
95	APC	I	Error signal input for the laser automatic power control Not used
96	DDIN	I	Connected to the +3.3V power supply in this set

Pin No.	Pin Name	I/O	Description
97	DDOUT	O	Open terminal in this set
98	ASYO	O	Playback EFM full-swing output terminal
99	ASYI	I	Playback EFM asymmetry comparator voltage input terminal
100	AVD1	—	Power supply terminal (+3.3V)
101	BIAS	I	Playback EFM asymmetry circuit constant current input terminal
102	RFI	I	Playback EFM RF signal input terminal
103	AVS1	—	Ground terminal
104	PCO	O	Phase comparison output for master clock of the recording/playback EFM master PLL
105	FILI	I	Filter input for master clock of the recording/playback master PLL
106	FILO	O	Filter output for master clock of the recording/playback master PLL
107	CLTV	I	Internal VCO control voltage input of the recording/playback master PLL
108	VDC3	—	Power supply terminal (+2.5V)
109	VSC3	—	Ground terminal
110	FS4	O	176.4 kHz clock signal output terminal Not used
111	SRDR	O	Sled servo drive PWM signal (–) output terminal
112	SFDR	O	Sled servo drive PWM signal (+) output terminal
113	SPRD	O	Spindle servo drive PWM signal (–) output terminal
114	SPFD	O	Spindle servo drive PWM signal (+) output terminal
115	FGIN	I	FG input for spindle CAV servo Not used
116 to 118	TEST1 to TEST3	I	For test terminal
119	MTFLGR/TRK	O	R-ch zero-data detection flag output or tracking servo drive signal output terminal Not used
120	FOK	O	Focus OK signal output terminal “H”: focus OK

• **SERVO BOARD IC7 MB90473PFV-G-150-BNDE1 (MD MECHANISM CONTROLLER)**

Pin No.	Pin Name	I/O	Description
1	MDMON	O	Power supply on/off control signal output of the MD mechanism deck section
2	LINKOFF	O	Uni-link on/off control signal output for the SONY bus interface “L”: link on
3	ERR-PWM	O	Error rate PWM output terminal Not used
4	NC	O	Not used
5	3TPWM	O	3T jitter PWM output terminal Not used
6	NC	O	Not used
7	A-ATT	O	Audio muting on/off control signal output terminal “H”: muting
8	NC	O	Not used
9	VSS	—	Ground terminal
10	NC	O	Not used
11	EMPHA_0	O	MD emphasis control signal output terminal “H”: emphasis on Not used
12	NC	O	Not used
13	DISC_EXIST	I	Disc detection sensor input terminal Not used
14	EJECT_OK	I	Front panel open/close detection input terminal “L”: close
15	OPEN_REQ	O	Eject request signal output terminal “L”: close request, “H”: open request
16	SRDT	I	Reading serial data signal input from the MD DSP
17	SWDT	O	Writing serial data signal output to the MD DSP
18	SCLK	O	Serial data transfer clock signal output to the MD DSP
19	MD-LAT	O	Serial data latch pulse output to the RF amplifier and MD DSP
20	NC	O	Not used
21	VCC	—	Power supply terminal (+3.3V)
22 to 24	NC	O	Not used
25	RXD	I	Receive data input terminal for UART communication when data writing to the internal flash memory
26	TXD	O	Transmit data output terminal for UART communication when data writing to the internal flash memory
27	FLASH_W	I	Mode select terminal for data writing to the internal flash memory
28 to 32	NC	O	Not used
33	AVCC	—	Power supply terminal (+3.3V)
34	AVRH	I	Reference voltage input for the internal A/D converter
35	AVSS	—	Ground terminal
36 to 39	NC	O	Not used
40	VSS	—	Ground terminal
41	REF_LEVEL	I	Light amount signal (ABCD) input terminal
42 to 45	NC	O	Not used
46	CC-XINT	I	Interrupt status input from the MD DSP
47 to 49	MD0 to MD2	—	Setting terminal for the CPU operational mode
50	BUS_ON	I	SONY bus on/off control signal input terminal “L”: bus on
51	BU_IN	I	Back up power supply detection signal input terminal “L” is input at low voltage
52	SQ_SY	I	Subcode Q sync (SCOR) input from the MD DSP “L” is input every 13.3 msec Almost all, “H” is input
53	DISC-IN	I	Disc loading detection switch input terminal “L”: loading
54, 55	NC	O	Not used
56	UNISI	I	Serial data input from the SONY bus interface IC
57	UNISO	O	Serial data output to the SONY bus interface IC
58	UNICLK	I	Serial data transfer clock signal input from the system controller

Pin No.	Pin Name	I/O	Description
59	NC	O	Not used
60	ADER-PWM	O	ADIP error PWM output terminal Not used
61 to 68	NC	O	For test terminal Not used
69	MDMON_CHECK	I	Power supply detection of MD mechanism deck section (MDMON)
70	MDON_CHECK	I	Power supply detection of servo section (MDON)
71 to 74	NC	O	Not used
75	RSTX	I	System reset signal input from the reset signal generator and reset switch “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
76	NC	O	Not used
77	XIA	I	System clock input terminal Not used
78	XOA	O	System clock output terminal Not used
79	VSS	—	Ground terminal
80	X0	I	System clock input terminal (18.43 MHz)
81	X1	O	System clock output terminal (18.43 MHz)
82	VCC	—	Power supply terminal (+3.3V)
83	NC	O	Not used
84	EJECT	O	Loading motor control signal output terminal (eject direction)
85	LOAD	O	Loading motor control signal output terminal (loading direction)
86	NC	O	Not used
87	<u>LIMIT_IN</u>	I	Detection input from the sled limit-in detect switch The optical pick-up is inner position when “L”
88	<u>LOAD_END</u>	I	Chuckling completed detection switch input terminal “L”: chuckling completion
89	INIT1	I	Analog/digital model setting terminal “L”: digital Not used
90, 91	INIT2, INIT3	I	Digital word size setting terminal Not used
92	NC	O	Not used
93	MD_ON	O	Power supply on/off control signal output of the servo section “H”: power on
94	<u>MD_RST</u>	O	System reset signal output to the servo section
95	SENS	I	Internal status (SENS) input from the MD DSP
96	NC	O	Not used
97	NC	I	Not used
98	MNT2	I	Monitor signal input from the MD DSP (for reserve terminal)
99	NC	O	Not used
100	FOK	I	Focus OK signal input terminal “H”: focus OK

• MAIN BOARD IC600 MN101E01KDA1 (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	DAVDD	—	Power supply terminal (+3.3V)
2	NCO	O	Not used
3	DAVSS	—	Ground terminal
4 to 9	NCO	O	Not used
10	VDD1	—	Power supply terminal (+3.3V)
11	MMOD	I	Internal flash memory data write mode detection signal input terminal Not used
12	OSCOOUT	O	System clock output terminal (27.648 MHz)
13	OSCIN	I	System clock input terminal (27.648 MHz)
14	VSS1	—	Ground terminal
15	XIN	I	System clock input terminal (32.768 kHz)
16	XOUT	O	System clock output terminal (32.768 kHz)
17	VDD2	—	Power supply terminal (+3.3V)
18	MOD1	I	Setting terminal for the CPU operational mode fixed at “H”
19	$\overline{\text{RESET}}$	I	System reset signal input from the reset signal generator and reset switch “L”: reset For several hundreds msec. after the power supply rises, “L” is input, then it changes to “H”
20	RCIN1	I	Rotary remote commander shift key input terminal
21	$\overline{\text{ACCIN}}$	I	Accessory power detection signal input terminal “L”: accessory power on
22	$\overline{\text{TESTIN}}$	I	Test mode setting terminal “L”: test mode, normally fixed at “H”
23	TELLATT	I	Telephone muting detection signal input terminal At input of “H”, the audio signal is attenuated by 20 dB
24	ATT	O	Audio muting on/off control signal output terminal
25	$\overline{\text{ADON}}$	O	A/D converter power control signal output When the KEY ACK (pin 27) that controls reference voltage power for key A/D conversion input is active, “L” is output from this terminal to enable the input
26	NCO	—	Not used
27	KEYACK	I	Acknowledge signal (wake up signal) input terminal for the key entry Acknowledge signal is input to accept any function key in the standby status On at input of “H”
28	TUATTIN	I	Tuner muting zero-cross detection signal input terminal
29	MDON	I	Power supply on/off control signal input of the servo section
30	MDMON	I	Power supply on/off control signal input of the MD mechanism deck section
31	BUIN	I	Back up power supply detection signal input terminal “L” is input at low voltage
32	NCO	O	Not used
33	UNISO	O	Serial data output to the SONY bus interface IC
34	UNISI	I	Serial data input from the SONY bus interface IC
35	UNICKO	O	Serial data transfer clock signal output to the SONY bus interface IC and MD mechanism controller
36 to 38	NCO	O	Not used
39	OPENREQ	O	Front panel open request signal output terminal Not used
40	$\overline{\text{BUSON}}$	O	SONY bus on/off control signal output terminal “L”: bus on
41	MDBOOT	O	Internal flash memory data write control signal output terminal Not used
42	$\overline{\text{SYSRST}}$	O	System reset signal output to the MD mechanism controller and SONY bus interface IC
43 to 50	NCO	O	Not used
51	AMPATT	O	Amplifier muting on/off control signal output terminal Not used
52	DEST1	I	Setting terminal for the destination
53, 54	DEST2, DEST3	I	Setting terminal for model discrimination Not used
55	$\overline{\text{DOORSW}}$	I	Front panel open/close detection input terminal “L”: close

Pin No.	Pin Name	I/O	Description
56	DIAG	I	DIAG signal input from the power amplifier
57	$\overline{\text{VOLATT}}$	O	Muting on/off control signal output to the electrical volume
58	NCO (AUX)	O	Not used
59	$\overline{\text{NOSESW}}$	I	Front panel remove/attach detection signal input terminal “L”: front panel is attached
60 to 62	NCO	O	Not used
63	VSS2	O	Ground terminal
64	TUATT	O	Tuner muting on/off control signal output terminal
65	NCO (TUON)	O	Not used
66	NSMASK	O	Discharge control signal output for the noise detection circuit “H”: discharge
67	E2P_CKO	O	Serial data transfer clock signal output to the EEPROM in tuner unit
68	E2P_SIO	I/O	Two-way data bus with the EEPROM in tuner unit
69	DOORIND	O	Illumination LED drive signal output of the sub panel
70	$\overline{\text{AMPSTB}}$	O	Standby on/off control signal output to the power amplifier
71 to 75	NCO	O	Not used
76	LCDSO	O	Serial data output to the LCD controller
77	LCDCE	O	Chip enable signal output to the LCD controller
78	LCDCKO	O	Serial data transfer clock signal output to the LCD controller
79	I2C_SIO	I/O	IIC two-way data bus with the tuner unit, electrical volume and power amplifier
80	NCO	O	Not used
81	I2C_CKO	O	IIC bus clock signal output to the tuner unit, electrical volume and power amplifier
82	DAVN	I	Data transmit completed detection signal input terminal
83	SIRCS	I	SIRCS signal input terminal
84	NCO	O	Not used
85	BEEP	O	Beep sound drive signal output terminal
86 to 88	NCO	O	Not used
89	VDD3	—	Power supply terminal (+5V)
90	NCO	O	Not used
91	VSS3	—	Ground terminal
92	QUALITY	I	Noise level detection signal input at SEEK mode (A/D input)
93	VSM	I	FM and AM signal-meter voltage detection signal input from the tuner unit (A/D input)
94	KEYIN1	I	Front panel key input terminal (A/D input)
95	KEYIN0	I	Front panel key input terminal (A/D input)
96	RCIN0	I	Rotary remote commander key input terminal (A/D input)
97 to 99	NCO	O	Not used
100	VREF+	I	Reference voltage (+5V) input terminal



## SECTION 6

### EXPLODED VIEWS

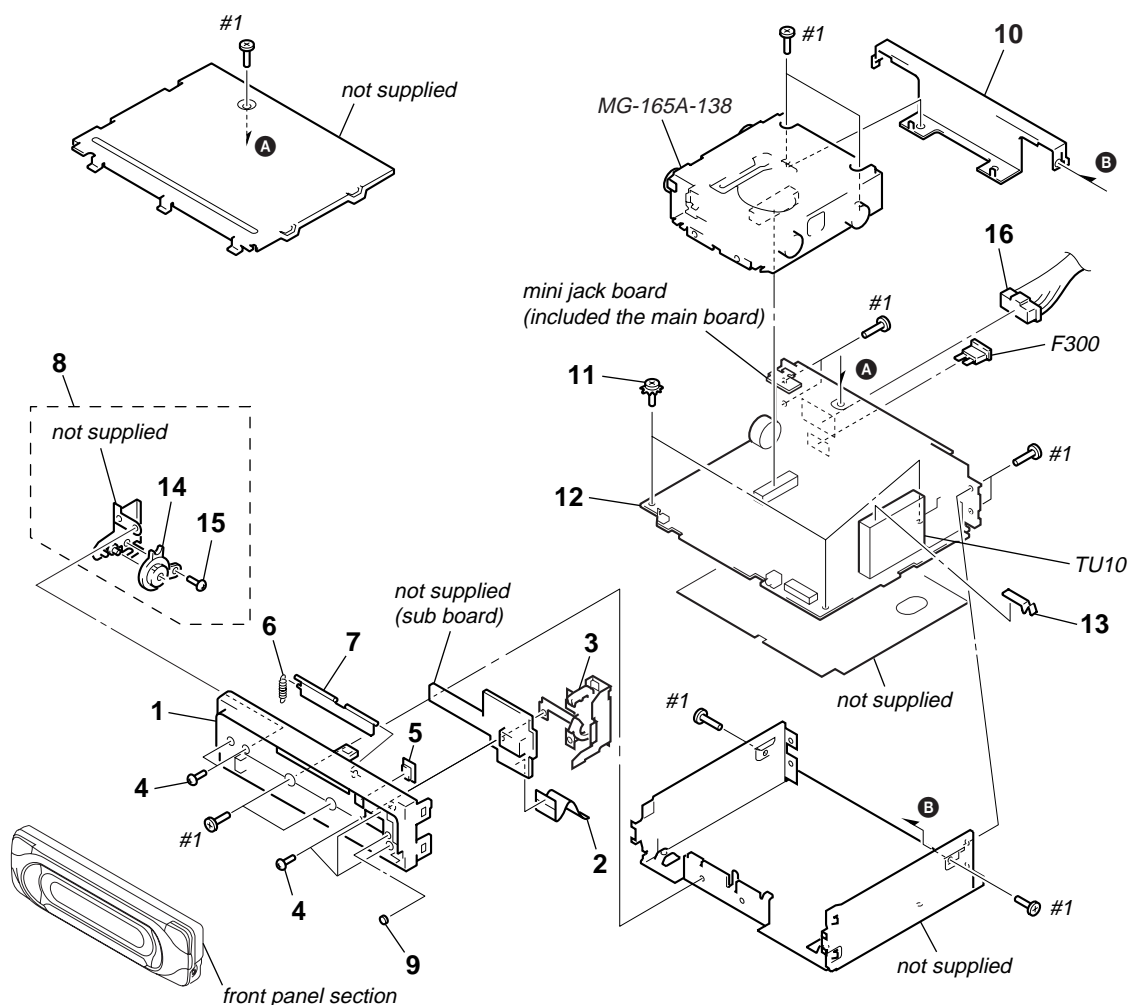
NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts  
Example:  
KNOB, BALANCE (WHITE) . . . (RED)

- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of the electrical parts list.

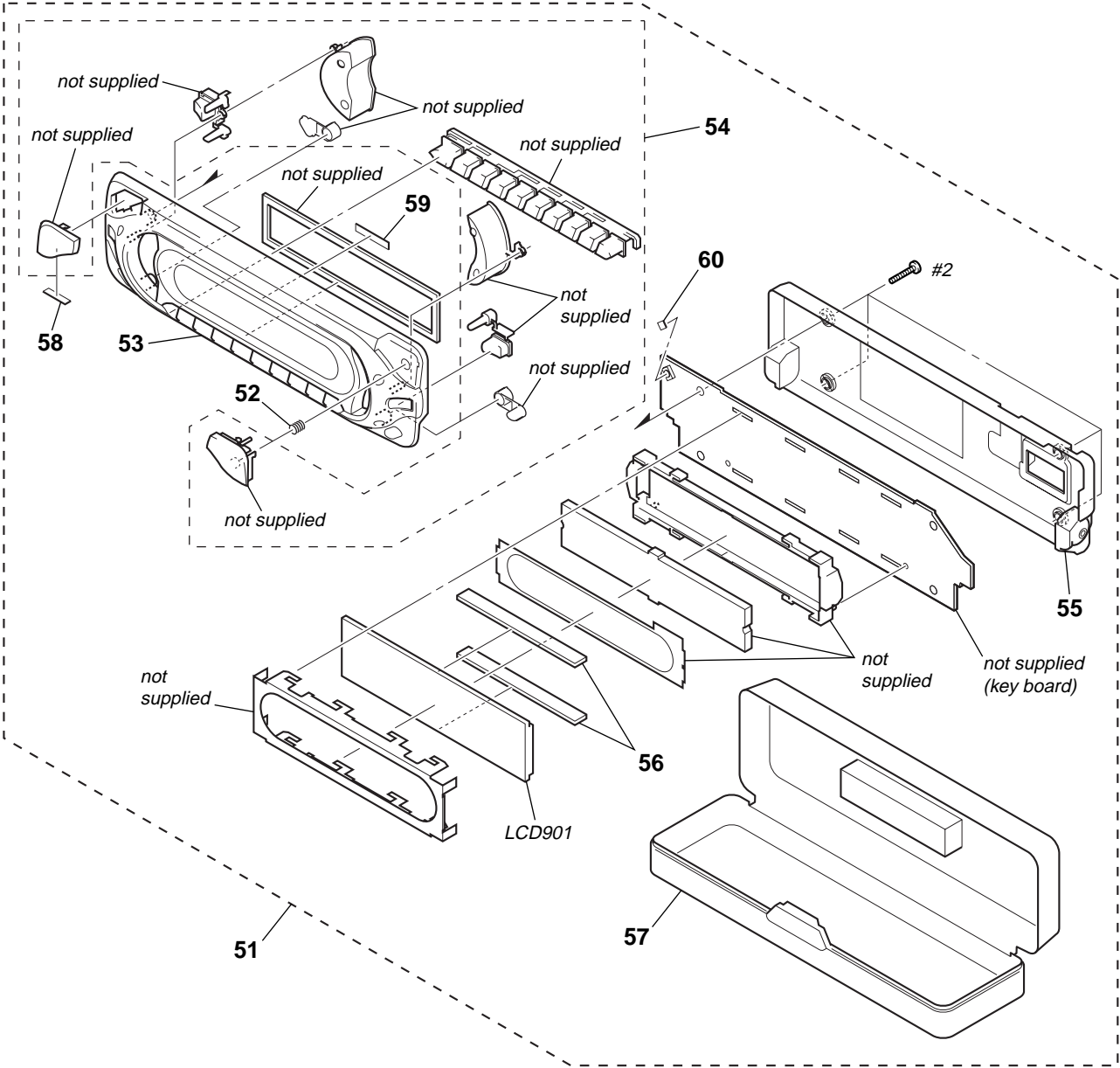
The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety. Replace only with part number specified.

## 6-1. CHASSIS SECTION



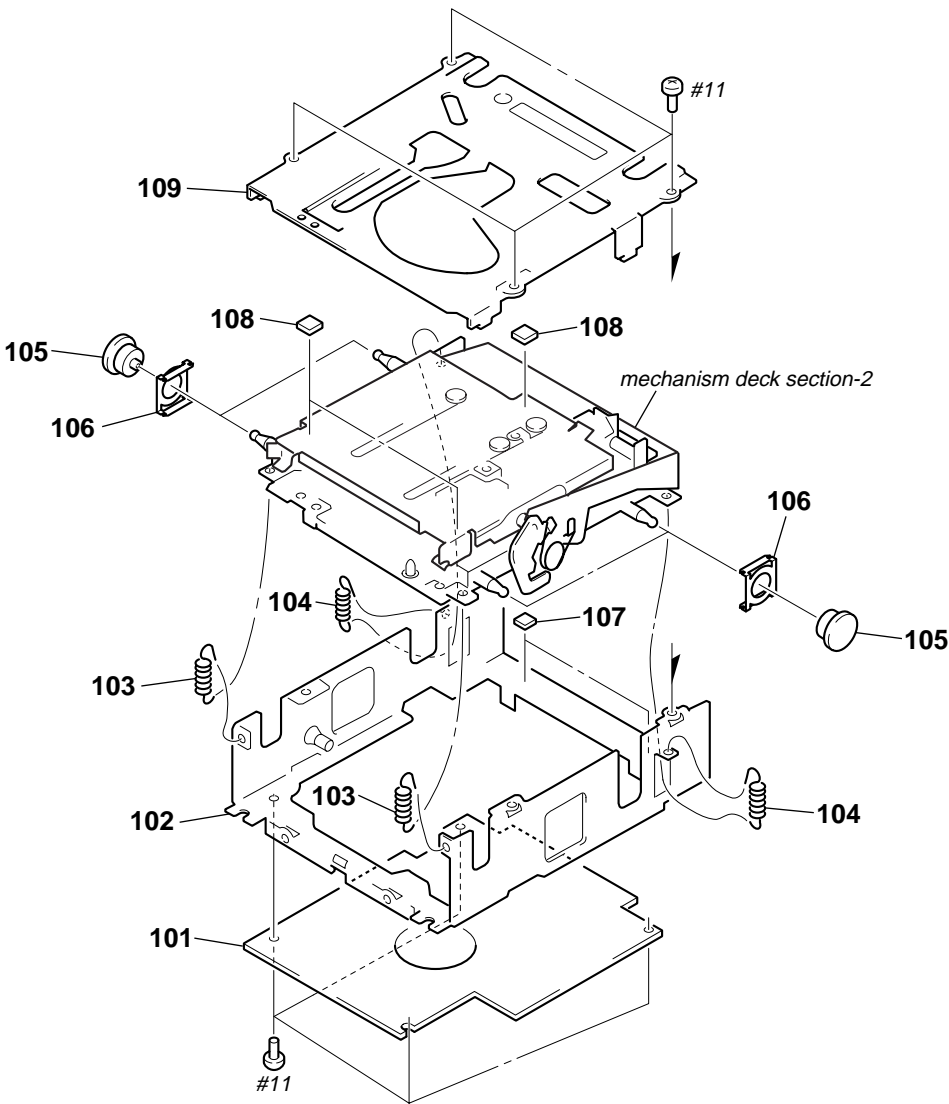
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
1	X-3382-791-1	PANEL ASSY, SUB		11	3-376-464-11	SCREW (+PTT 2.6X6), GROUND POINT	
2	1-792-195-11	CABLE, FLEXIBLE FLAT (14CORE)		12	A-3274-719-A	MAIN BOARD, COMPLETE (Including the MINI JACK board)	
3	X-3381-381-3	LOCK ASSY		13	3-246-481-01	PLATE (TU), GROUND	
4	3-042-244-01	SCREW (T)		14	3-030-909-03	DAMPER, OIL	
5	3-040-990-01	BUTTON (EJECT) (▲)		15	3-713-786-51	SCREW (M2X3)	
6	3-034-086-01	SPRING (DOOR)					
7	3-033-750-03	DOOR (MD)		16	1-776-527-61	CORD (WITH CONNECTOR) (ISO) (POWER)	
8	X-3376-699-6	GEAR ASSY		F300	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) (10A/32V)	
9	3-243-177-01	CUSHION (SUB PANEL)		TU10	A-3220-887-A	TUNER UNIT (TUX-030//Q)	
10	3-248-458-01	BRACKET (MD)		#1	7-685-792-09	SCREW +PTT 2.6X6 (S)	

6-2. FRONT PANEL SECTION



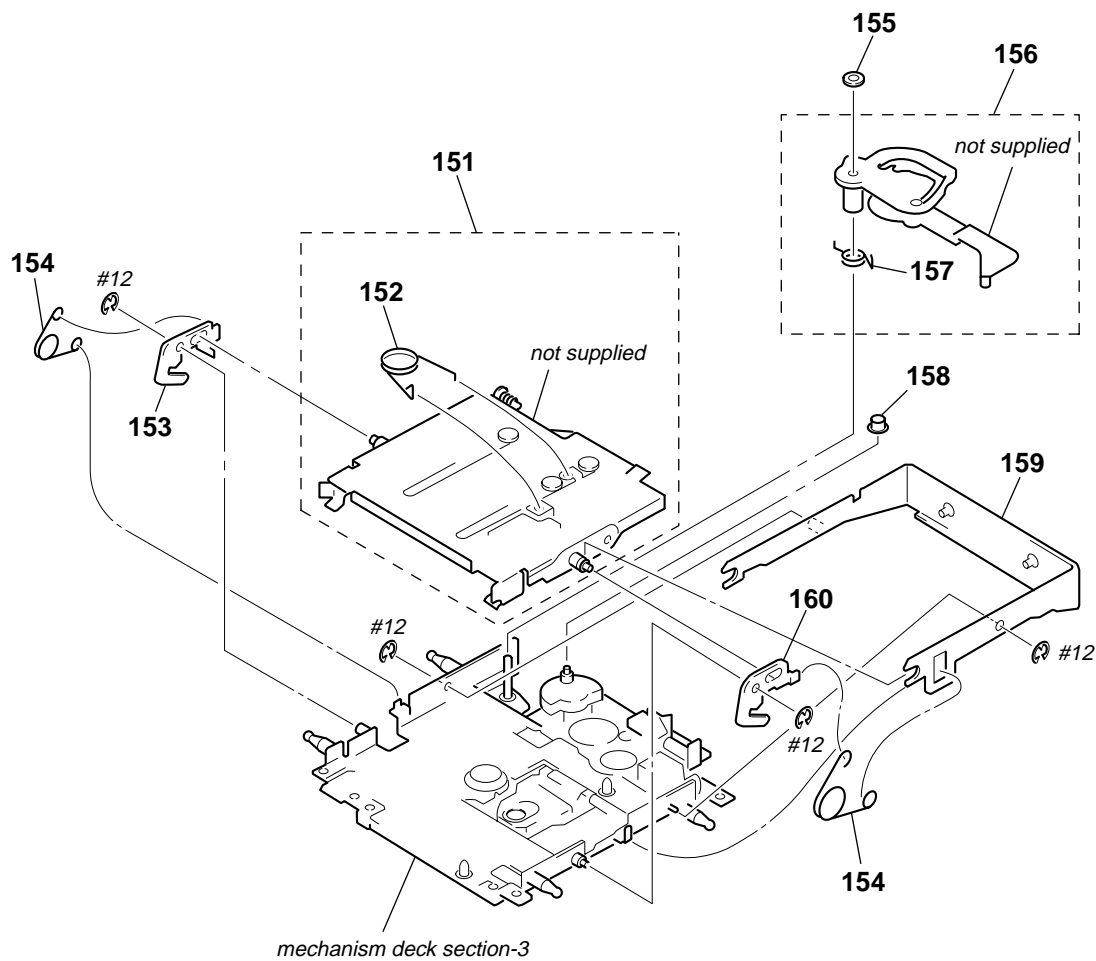
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
51	A-3337-390-A	PANEL COMPLETE ASSY, FRONT		57	X-3383-264-2	CASE ASSY	
52	3-246-778-01	SPRING (OPEN)		58	3-253-597-01	SHEET (S)	
53	X-3383-115-1	PANEL (SV) ASSY, FRONT		59	3-252-202-01	SHEET (ESD)	
54	X-3383-105-6	BUTTON ASSY (S)		* 60	3-014-602-01	SPACER (A)	
55	X-3382-702-3	PANEL ASSY, FRONT BACK		LCD901	1-805-076-11	DISPLAY PANEL, LIQUID CRYSTAL	
56	1-694-976-11	CONDUCTIVE BOARD, CONNECTION		#2	7-685-106-19	SCREW +P 2X10 TYPE2 NON-SLIT	

6-3. MECHANISM DECK SECTION-1  
(MG-165A-138)



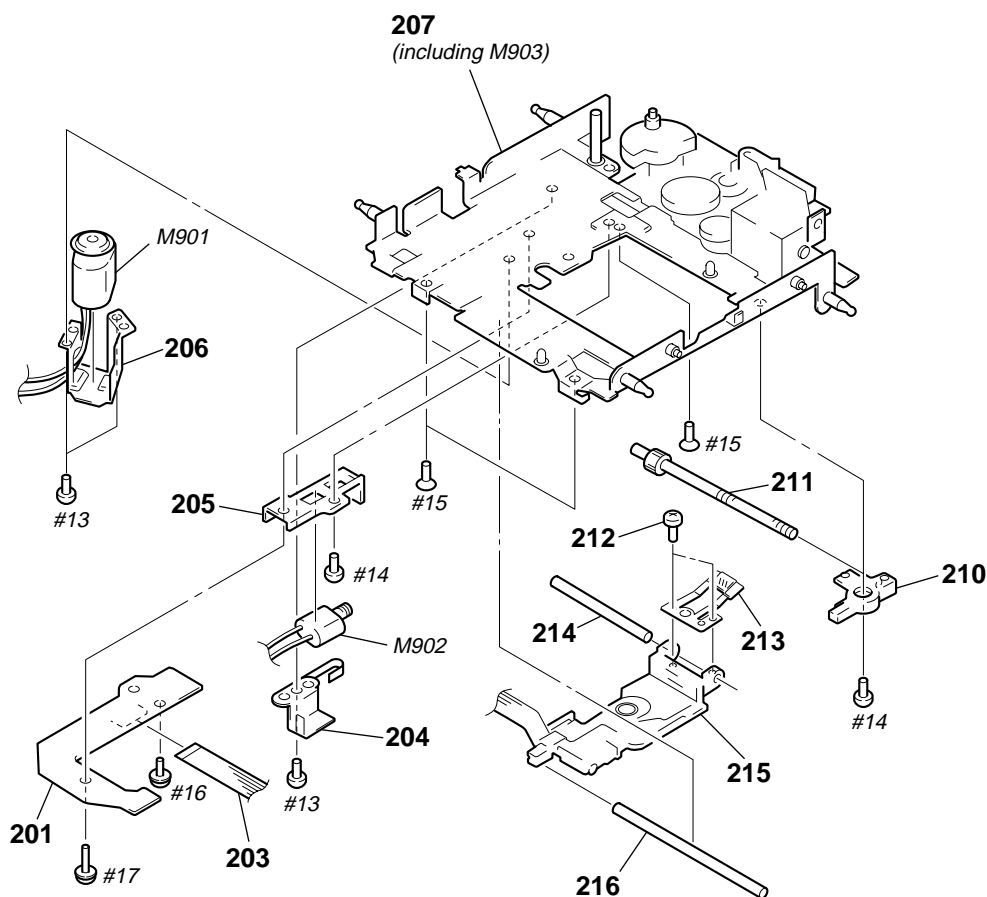
Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
101	A-3274-602-A	SERVO BOARD, COMPLETE		* 106	3-220-096-02	BRACKET (DAMPER)	
* 102	X-3379-367-2	CHASSIS ASSY, MD		* 107	3-034-301-01	CUSHION (EJ2)	
103	3-032-714-02	SPRING (FLOAT F), TENSION		* 108	3-034-302-01	CUSHION (EJ3)	
104	3-921-111-01	SPRING (FL2), TENSION		* 109	X-3379-368-1	COVER ASSY, MD	
105	3-931-897-61	DAMPER (T)		#11	7-685-851-04	SCREW +BVTT 2X4 (S)	

6-4. MECHANISM DECK SECTION-2  
(MG-165A-138)



Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
* 151	X-3381-040-1	HOLDER ASSY		157	3-032-707-01	SPRING (LEVER LE)	
152	3-032-682-01	SPRING (HOLDER)		158	3-925-034-01	ROLLER (GLE)	
* 153	3-032-712-01	LEVER (LOCK R)		* 159	X-3376-798-2	ARM ASSY, CHUCKING	
154	3-919-281-01	SPRING (CHKG)		* 160	3-032-711-01	LEVER (LOCK L)	
155	3-035-932-01	WASHER, STOPPER		#12	7-624-102-04	STOP RING 1.5, TYPE-E	
* 156	X-3379-362-3	LEVER (LE23) ASSY					

## 6-5. MECHANISM DECK SECTION-3 (MG-165A-138)



The components identified by mark  $\triangle$  or dotted line with mark  $\triangle$  are critical for safety.  
Replace only with part number specified.

Ref. No.	Part No.	Description	Remark	Ref. No.	Part No.	Description	Remark
201	A-3274-600-A	SENSOR BOARD, COMPLETE		* 214	3-919-293-01	SHAFT (SL)	
203	1-827-113-11	WIRE, PARALLEL (FFC) (10 CORE)		$\triangle$ 215	8-583-116-03	OPTICAL PICK-UP KMS-242E/Q-RP	
* 204	3-919-283-01	BRACKET (SL)		* 216	3-920-537-01	SHAFT (SL2)	
* 205	3-032-704-02	BASE (SL)		M901	A-3301-407-A	MOTOR ASSY, SP (SPINDLE)	
* 206	3-919-297-01	RETAINER (SP)		M902	A-3291-190-A	MOTOR ASSY, SL (SLED)	
207	A-3315-218-C	CHASSIS (OP) ASSY		#13	7-627-852-37	PRECISION SCREW +P 1.7X1.8 TYPE 3	
* 210	3-032-705-01	BEARING (SL)		#14	7-621-772-08	SCREW +B 2X3	
211	X-3373-213-1	SCREW ASSY, FEED		#15	7-621-555-10	SCREW +K 2X3	
212	3-939-590-07	SCREW (IB LOCK)		#16	7-628-253-00	SCREW +PS 2X4	
213	3-026-082-11	SPRING (SL OUTSERT), FEED		#17	7-628-253-35	SCREW +PS 2X8	

## SECTION 7 ELECTRICAL PARTS LIST

### KEY

**NOTE:**

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- **RESISTORS**  
All resistors are in ohms.  
METAL: Metal-film resistor.  
METAL OXIDE: Metal oxide-film resistor.  
F: nonflammable

- Items marked “\*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- **SEMICONDUCTORS**  
In each case, u:  $\mu$ , for example:  
uA. . . :  $\mu$ A. . .      uPA. . . :  $\mu$ PA. . .  
uPB. . . :  $\mu$ PB. . .    uPC. . . :  $\mu$ PC. . .  
uPD. . . :  $\mu$ PD. . .
- **CAPACITORS**  
uF:  $\mu$ F
- **COILS**  
uH:  $\mu$ H

The components identified by mark  $\Delta$  or dotted line with mark  $\Delta$  are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description	Remark				Ref. No.	Part No.	Description	Remark			
		KEY BOARD *****											
*	1-694-976-11	CONDUCTIVE BOARD, CONNECTION						LSW904	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (SEL)			
	3-014-602-01	SPACER (A)						LSW905	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (+ (VOLUME))			
		< CAPACITOR >						LSW906	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (- (VOLUME))			
C971	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V			LSW907	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (ATT)			
C981	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V			LSW908	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (MODE)			
C982	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V			LSW909	1-771-883-31	SWITCH, TACTILE (WITH LED) (AF)			
C983	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V			LSW910	1-771-883-31	SWITCH, TACTILE (WITH LED) (BTM, SENS)			
C984	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V			LSW912	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (DSPL)			
C985	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V			LSW913	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (SEEK +, ►►► ►►)			
C986	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V			LSW914	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (SEEK -, ◀◀◀ ◀◀)			
		< CONNECTOR >						LSW915	1-771-883-31	SWITCH, TACTILE (WITH LED) (TA)			
CN901	1-817-158-21	PLUG, CONNECTOR 14P						LSW916	1-771-883-31	SWITCH, TACTILE (WITH LED) (LIST, PTY)			
		< DIODE >						LSW917	1-771-883-31	SWITCH, TACTILE (WITH LED) (GP/ALBM +, 6)			
D901	8-719-085-72	DIODE UMZ6.8ENTR						LSW918	1-771-883-31	SWITCH, TACTILE (WITH LED) (GP/ALBM -, 5)			
D902	8-719-083-66	DIODE UDZSTE-1718B						LSW919	1-771-883-31	SWITCH, TACTILE (WITH LED) (SHUF, 4)			
D981	8-719-069-54	DIODE UDZSTE-175.1B						LSW920	1-771-883-31	SWITCH, TACTILE (WITH LED) (REP, 3)			
D983	8-719-404-50	DIODE MA111-TX						LSW921	1-771-883-31	SWITCH, TACTILE (WITH LED) (DISC +, 2)			
		< IC >						LSW922	1-771-883-31	SWITCH, TACTILE (WITH LED) (DISC -, 1)			
IC901	8-759-826-21	IC LC75874W								< RESISTOR >			
IC971	6-600-163-01	IC RS-770						R901	1-216-819-11	METAL CHIP	680	5%	1/10W
		< LIQUID CRYSTAL DISPLAY >						R902	1-216-819-11	METAL CHIP	680	5%	1/10W
LCD901	1-805-076-11	DISPLAY PANEL, LIQUID CRYSTAL						R903	1-216-819-11	METAL CHIP	680	5%	1/10W
		< LED >						R904	1-216-821-11	METAL CHIP	1K	5%	1/10W
LED903	6-500-450-01	DIODE CL-195SR-CD-T (KEY ILLUMINATION)						R905	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
LED911	6-500-450-01	DIODE CL-195SR-CD-T (KEY ILLUMINATION)						R906	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
LED933	6-500-459-01	DIODE NSCW505T-ARS (LCD BACK LIGHT)						R907	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
LED934	6-500-459-01	DIODE NSCW505T-ARS (LCD BACK LIGHT)						R908	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
LED951	6-500-450-01	DIODE CL-195SR-CD-T (KEY ILLUMINATION)						R909	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
LED952	6-500-450-01	DIODE CL-195SR-CD-T (KEY ILLUMINATION)						R910	1-218-867-11	METAL CHIP	6.8K	5%	1/10W
LED953	6-500-450-01	DIODE CL-195SR-CD-T (KEY ILLUMINATION)						R911	1-216-819-11	METAL CHIP	680	5%	1/10W
LED954	6-500-450-01	DIODE CL-195SR-CD-T (KEY ILLUMINATION)						R912	1-216-819-11	METAL CHIP	680	5%	1/10W
		< SWITCH >						R913	1-216-819-11	METAL CHIP	680	5%	1/10W
LSW901	1-771-476-11	SWITCH, KEY BOARD (WITH LED) (OFF)						R914	1-216-821-11	METAL CHIP	1K	5%	1/10W
								R915	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
								R916	1-216-823-11	METAL CHIP	1.5K	5%	1/10W
								R917	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
								R918	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
								R919	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
								R920	1-218-867-11	METAL CHIP	6.8K	5%	1/10W

KEY

MAIN

Ref. No.	Part No.	Description			Remark	Ref. No.	Part No.	Description			Remark
R921	1-216-833-11	METAL CHIP	10K	5%	1/10W	C15	1-124-584-00	ELECT	100uF	20%	10V
R927	1-216-025-11	RES-CHIP	100	5%	1/10W	C16	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R928	1-216-021-00	METAL CHIP	68	5%	1/10W	C17	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R929	1-216-017-00	RES-CHIP	47	5%	1/10W	C18	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R930	1-216-017-00	RES-CHIP	47	5%	1/10W	C60	1-115-156-11	CERAMIC CHIP	1uF		10V
R931	1-216-041-00	METAL CHIP	470	5%	1/10W	C61	1-115-156-11	CERAMIC CHIP	1uF		10V
R934	1-216-017-00	RES-CHIP	47	5%	1/10W	C91	1-162-917-11	CERAMIC CHIP	15PF	5%	50V
R935	1-216-025-11	RES-CHIP	100	5%	1/10W	C92	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
R936	1-216-021-00	METAL CHIP	68	5%	1/10W	C93	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
R941	1-216-025-11	RES-CHIP	100	5%	1/10W	C94	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R942	1-216-021-00	METAL CHIP	68	5%	1/10W	C96	1-164-739-11	CERAMIC CHIP	560PF	5%	50V
R946	1-216-025-11	RES-CHIP	100	5%	1/10W	C97	1-135-834-11	CERAMIC CHIP	2.2uF		6.3V
R947	1-216-021-00	METAL CHIP	68	5%	1/10W	C98	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
R950	1-216-025-11	RES-CHIP	100	5%	1/10W	C99	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
R951	1-216-021-00	METAL CHIP	68	5%	1/10W	C100	1-124-589-11	ELECT	47uF	20%	16V
R960	1-216-025-11	RES-CHIP	100	5%	1/10W	C120	1-128-428-11	ELECT	10uF	20%	35V
R961	1-216-025-11	RES-CHIP	100	5%	1/10W	C121	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
R962	1-216-029-11	RES-CHIP	150	5%	1/10W	C122	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
R966	1-216-025-11	RES-CHIP	100	5%	1/10W	C125	1-104-942-11	ELECT	1uF	20%	50V
R967	1-216-037-00	METAL CHIP	330	5%	1/10W	C126	1-104-942-11	ELECT	1uF	20%	50V
R970	1-216-864-11	METAL CHIP	0	5%	1/10W	C127	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
R971	1-216-821-11	METAL CHIP	1K	5%	1/10W	C128	1-136-154-00	FILM	0.012uF	5%	50V
R972	1-216-809-11	METAL CHIP	100	5%	1/10W	C129	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
R975	1-216-817-11	METAL CHIP	470	5%	1/10W	C130	1-136-154-00	FILM	0.012uF	5%	50V
R976	1-216-817-11	METAL CHIP	470	5%	1/10W	C131	1-124-589-11	ELECT	47uF	20%	16V
R977	1-216-817-11	METAL CHIP	470	5%	1/10W	C132	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
R978	1-216-817-11	METAL CHIP	470	5%	1/10W	C135	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R979	1-216-817-11	METAL CHIP	470	5%	1/10W	C136	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
R980	1-216-817-11	METAL CHIP	470	5%	1/10W	C210	1-104-942-11	ELECT	1uF	20%	50V
R981	1-216-811-11	METAL CHIP	150	5%	1/10W	C211	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
R982	1-216-811-11	METAL CHIP	150	5%	1/10W	C220	1-104-942-11	ELECT	1uF	20%	50V
R983	1-216-811-11	METAL CHIP	150	5%	1/10W	C221	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
R985	1-216-864-11	METAL CHIP	0	5%	1/10W	C241	1-128-428-11	ELECT	10uF	20%	35V
R986	1-216-821-11	METAL CHIP	1K	5%	1/10W	C245	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
R987	1-216-821-11	METAL CHIP	1K	5%	1/10W	C246	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
R988	1-216-821-11	METAL CHIP	1K	5%	1/10W	C247	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
R989	1-216-840-11	METAL CHIP	39K	5%	1/10W	C251	1-128-428-11	ELECT	10uF	20%	35V
R990	1-216-857-11	METAL CHIP	1M	5%	1/10W	C255	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
< SWITCH >						C256	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
< SWITCH >						C257	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
S902	1-771-884-31	SWITCH, TACTILE (WITH LED) (SOURCE)				C261	1-128-428-11	ELECT	10uF	20%	35V
S903	1-771-884-31	SWITCH, TACTILE (WITH LED) (DSO)				C265	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
S911	1-771-884-31	SWITCH, TACTILE (WITH LED) (EQ3)				C266	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
*****						C267	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
A-3274-719-A MAIN BOARD, COMPLETE						C271	1-128-428-11	ELECT	10uF	20%	35V
*****						C275	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
(Including the MINI JACK board)						C276	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V
7-685-134-19 SCREW +P 2.6X8 TYPE2 NON-SLIT						C277	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
7-685-793-09 SCREW +PTT 2.6X8 (S)						C300	1-124-234-00	ELECT	22uF	20%	16V
7-685-795-09 SCREW +PTT 2.6X12 (S)						C301	1-126-160-11	ELECT	1uF	20%	50V
< CAPACITOR >						C302	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C10	1-124-259-11	ELECT	4.7uF	20%	16V	C303	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C11	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V	C304	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C12	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C305	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C13	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	C306	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
C14	1-124-584-00	ELECT	100uF	20%	10V	C307	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V
						C320	1-124-584-00	ELECT	100uF	20%	10V
						C321	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

MAIN

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
C322	1-124-234-00	ELECT	22uF	20%	16V								
C323	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V			< DIODE >					
C324	1-124-234-00	ELECT	22uF	20%	16V	D60	8-719-069-55	DIODE	UDZSTE-175.6B				
C325	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	D72	8-719-069-54	DIODE	UDZSTE-175.1B				
C326	1-124-234-00	ELECT	22uF	20%	16V	D300	8-719-970-02	DIODE	1SR139-400T-32				
C327	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	D301	8-719-970-02	DIODE	1SR139-400T-32				
C328	1-124-589-11	ELECT	47uF	20%	16V	D302	8-719-970-02	DIODE	1SR139-400T-32				
C329	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	D303	8-719-970-02	DIODE	1SR139-400T-32				
C330	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	D304	8-719-970-02	DIODE	1SR139-400T-32				
C331	1-135-473-21	ELECT	3300uF	20%	16V	D305	8-719-970-02	DIODE	1SR139-400T-32				
C332	1-124-589-11	ELECT	47uF	20%	16V	D306	8-719-970-02	DIODE	1SR139-400T-32				
C333	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	D307	8-719-970-02	DIODE	1SR139-400T-32				
C340	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V	D308	8-719-970-02	DIODE	1SR139-400T-32				
C345	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	D309	8-719-970-02	DIODE	1SR139-400T-32				
C350	1-124-589-11	ELECT	47uF	20%	16V	D310	8-719-970-02	DIODE	1SR139-400T-32				
C360	1-126-160-11	ELECT	1uF	20%	50V	D311	8-719-970-02	DIODE	1SR139-400T-32				
C374	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V	D312	8-719-049-38	DIODE	1N5404TU				
C380	1-115-156-11	CERAMIC CHIP	1uF		10V	D313	8-719-069-57	DIODE	UDZSTE-176.8B				
C400	1-127-715-11	CERAMIC CHIP	0.22uF	10%	16V	D350	8-719-040-04	DIODE	MA721WK- (TX)				
C401	1-126-935-11	ELECT	470uF	20%	16V	D351	8-719-404-50	DIODE	MA111-TX				
C402	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	D360	8-719-083-66	DIODE	UDZSTE-1718B				
C500	1-115-156-11	CERAMIC CHIP	1uF		10V	D363	8-719-083-66	DIODE	UDZSTE-1718B				
C501	1-115-156-11	CERAMIC CHIP	1uF		10V	D370	8-719-078-81	DIODE	DF5A6.8FU (TE85R)				
C502	1-125-891-11	CERAMIC CHIP	0.47uF	10%	10V	D371	8-719-083-66	DIODE	UDZSTE-1718B				
C503	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	D372	8-719-083-66	DIODE	UDZSTE-1718B				
C504	1-124-589-11	ELECT	47uF	20%	16V	D373	8-719-078-81	DIODE	DF5A6.8FU (TE85R)				
C505	1-124-584-00	ELECT	100uF	20%	10V	D375	8-719-404-50	DIODE	MA111-TX				
C506	1-124-589-11	ELECT	47uF	20%	16V	D401	8-719-083-66	DIODE	UDZSTE-1718B				
C507	1-124-589-11	ELECT	47uF	20%	16V	D402	8-719-072-70	DIODE	MA2ZD14001S0				
C600	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	D403	8-719-083-66	DIODE	UDZSTE-1718B				
C601	1-124-584-00	ELECT	100uF	20%	10V	D404	8-719-404-50	DIODE	MA111-TX				
C602	1-125-710-11	DOUBLE LAYER	0.1F		5.5V	D405	8-719-040-04	DIODE	MA721WK- (TX)				
C603	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	D406	8-719-056-84	DIODE	UDZSTE-177.5B				
C604	1-162-916-11	CERAMIC CHIP	12PF	5%	50V	D407	8-719-083-66	DIODE	UDZSTE-1718B				
C605	1-162-917-11	CERAMIC CHIP	15PF	5%	50V	D500	8-719-041-79	DIODE	MA721WA-TX				
C606	1-162-918-11	CERAMIC CHIP	18PF	5%	50V	D501	8-719-069-55	DIODE	UDZSTE-175.6B				
C607	1-162-917-11	CERAMIC CHIP	15PF	5%	50V	D600	8-719-400-20	DIODE	MA152WA				
C608	1-124-589-11	ELECT	47uF	20%	16V	D700	8-719-081-33	DIODE	MA2YD1500LS0				
C609	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	D701	8-719-081-33	DIODE	MA2YD1500LS0				
C610	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V								
C611	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V			< IC >					
C612	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	IC90	6-703-809-01	IC	SAA6588T/V2-518				
C613	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	IC120	6-703-304-01	IC	BD3802F-FE2				
C614	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	IC300	6-703-814-01	IC	TDA8588AJ/N1				
C615	1-124-589-11	ELECT	47uF	20%	16V	IC400	6-703-884-01	IC	BA8271F-E2				
C616	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	IC600	6-802-789-02	IC	MN101E01KDA1				
C620	1-164-315-11	CERAMIC CHIP	470PF	5%	50V								
C640	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	IC601	8-759-659-13	IC	PST3428UL				
C700	1-115-156-11	CERAMIC CHIP	1uF		10V	IC700	8-759-486-56	IC	NJM2370U36-TE2				
C701	1-124-233-11	ELECT	10uF	20%	16V			< JACK >					
C702	1-115-156-11	CERAMIC CHIP	1uF		10V								
C804	1-162-965-11	CERAMIC CHIP	1500PF	10%	50V	J10	1-815-185-12	JACK (ANT)	(FM/AM ANTENNA IN)				
< CONNECTOR >													
< SHORT >													
CN300	1-774-701-21	PIN, CONNECTOR 16P				JC17	1-216-864-11	METAL CHIP	0	5%	1/10W		
CN370	1-784-456-11	CONNECTOR, FFC/FPC 14P				JC60	1-216-864-11	METAL CHIP	0	5%	1/10W		
CNJ400	1-580-907-31	PLUG, CONNECTOR (BUS CONTROL IN)				JC80	1-216-864-11	METAL CHIP	0	5%	1/10W		
CNP500	1-764-617-12	PIN, CONNECTOR (PC BOARD) 30P				JC140	1-216-296-11	SHORT CHIP	0				



Ref. No.	Part No.	Description	Remark			Ref. No.	Part No.	Description	Remark		
JC141	1-216-864-11	METAL CHIP	0	5%	1/10W	R15	1-216-809-11	METAL CHIP	100	5%	1/10W
JC142	1-216-864-11	METAL CHIP	0	5%	1/10W	R16	1-216-821-11	METAL CHIP	1K	5%	1/10W
JC300	1-216-296-11	SHORT CHIP	0			R17	1-216-833-11	METAL CHIP	10K	5%	1/10W
JC301	1-216-864-11	METAL CHIP	0	5%	1/10W	R18	1-216-864-11	METAL CHIP	0	5%	1/10W
JC305	1-216-296-11	SHORT CHIP	0			R19	1-216-797-11	METAL CHIP	10	5%	1/10W
JC306	1-216-296-11	SHORT CHIP	0			R20	1-216-864-11	METAL CHIP	0	5%	1/10W
JC350	1-216-296-11	SHORT CHIP	0			R61	1-216-817-11	METAL CHIP	470	5%	1/10W
JC361	1-216-296-11	SHORT CHIP	0			R79	1-216-809-11	METAL CHIP	100	5%	1/10W
JC362	1-216-864-11	METAL CHIP	0	5%	1/10W	R91	1-216-837-11	METAL CHIP	22K	5%	1/10W
JC380	1-216-864-11	METAL CHIP	0	5%	1/10W	R92	1-216-797-11	METAL CHIP	10	5%	1/10W
JC403	1-216-864-11	METAL CHIP	0	5%	1/10W	R93	1-216-817-11	METAL CHIP	470	5%	1/10W
JC404	1-216-296-11	SHORT CHIP	0			R94	1-216-797-11	METAL CHIP	10	5%	1/10W
JC405	1-216-864-11	METAL CHIP	0	5%	1/10W	R95	1-216-809-11	METAL CHIP	100	5%	1/10W
JC406	1-216-296-11	SHORT CHIP	0			R96	1-216-809-11	METAL CHIP	100	5%	1/10W
JC407	1-216-296-11	SHORT CHIP	0			R120	1-216-833-11	METAL CHIP	10K	5%	1/10W
JC420	1-216-296-11	SHORT CHIP	0			R121	1-216-833-11	METAL CHIP	10K	5%	1/10W
JC421	1-216-296-11	SHORT CHIP	0			R122	1-216-833-11	METAL CHIP	10K	5%	1/10W
JC504	1-216-296-11	SHORT CHIP	0			R123	1-216-833-11	METAL CHIP	10K	5%	1/10W
JC610	1-216-296-11	SHORT CHIP	0			R124	1-216-882-11	METAL CHIP	30K	0.5%	1/10W
JC611	1-216-296-11	SHORT CHIP	0			R125	1-216-864-11	METAL CHIP	0	5%	1/10W
< COIL >						R140	1-216-809-11	METAL CHIP	100	5%	1/10W
L300	1-456-227-11	COIL, CHOKE	250uH			R141	1-216-809-11	METAL CHIP	100	5%	1/10W
L320	1-469-844-11	INDUCTOR	2.2uH			R210	1-216-833-11	METAL CHIP	10K	5%	1/10W
L328	1-469-844-11	INDUCTOR	2.2uH			R211	1-216-821-11	METAL CHIP	1K	5%	1/10W
< JACK >						R220	1-216-833-11	METAL CHIP	10K	5%	1/10W
PJ210	1-774-700-11	JACK, PIN 6P (AUDIO OUT FRONT/REAR, BUS AUDIO IN)				R221	1-216-821-11	METAL CHIP	1K	5%	1/10W
< TRANSISTOR >						R240	1-216-809-11	METAL CHIP	100	5%	1/10W
Q60	8-729-920-85	TRANSISTOR	2SD1664-T101-QR			R241	1-216-809-11	METAL CHIP	100	5%	1/10W
Q71	1-801-806-11	TRANSISTOR	DTC144EKA-T146			R242	1-216-841-11	METAL CHIP	47K	5%	1/10W
Q210	8-729-920-21	TRANSISTOR	DTC314TK-T-146			R243	1-216-821-11	METAL CHIP	1K	5%	1/10W
Q220	8-729-920-21	TRANSISTOR	DTC314TK-T-146			R250	1-216-809-11	METAL CHIP	100	5%	1/10W
Q230	8-729-920-21	TRANSISTOR	DTC314TK-T-146			R251	1-216-809-11	METAL CHIP	100	5%	1/10W
Q240	8-729-920-21	TRANSISTOR	DTC314TK-T-146			R252	1-216-841-11	METAL CHIP	47K	5%	1/10W
Q350	8-729-027-23	TRANSISTOR	DTA114EKA-T146			R253	1-216-821-11	METAL CHIP	1K	5%	1/10W
Q351	8-729-900-53	TRANSISTOR	DTC114EKA-T146			R260	1-216-809-11	METAL CHIP	100	5%	1/10W
Q360	8-729-120-28	TRANSISTOR	2SC2412K-T-146-QR			R261	1-216-809-11	METAL CHIP	100	5%	1/10W
Q361	8-729-120-28	TRANSISTOR	2SC2412K-T-146-QR			R262	1-216-841-11	METAL CHIP	47K	5%	1/10W
Q370	8-729-047-76	TRANSISTOR	FMC2A-T148			R263	1-216-821-11	METAL CHIP	1K	5%	1/10W
Q401	8-729-027-23	TRANSISTOR	DTA114EKA-T146			R270	1-216-809-11	METAL CHIP	100	5%	1/10W
Q402	8-729-900-53	TRANSISTOR	DTC114EKA-T146			R271	1-216-809-11	METAL CHIP	100	5%	1/10W
Q403	1-801-806-11	TRANSISTOR	DTC144EKA-T146			R272	1-216-841-11	METAL CHIP	47K	5%	1/10W
Q404	8-729-120-28	TRANSISTOR	2SC2412K-T-146-QR			R273	1-216-821-11	METAL CHIP	1K	5%	1/10W
Q405	8-729-027-23	TRANSISTOR	DTA114EKA-T146			R300	1-216-809-11	METAL CHIP	100	5%	1/10W
Q504	8-729-920-85	TRANSISTOR	2SD1664-T101-QR			R301	1-216-841-11	METAL CHIP	47K	5%	1/10W
Q505	8-729-047-76	TRANSISTOR	FMC2A-T148			R303	1-249-425-11	CARBON	4.7K	5%	1/4W
Q600	8-729-027-23	TRANSISTOR	DTA114EKA-T146			R304	1-216-821-11	METAL CHIP	1K	5%	1/10W
< RESISTOR/FERRITE >						R311	1-216-809-11	METAL CHIP	100	5%	1/10W
R10	1-216-837-11	METAL CHIP	22K	5%	1/10W	R312	1-216-809-11	METAL CHIP	100	5%	1/10W
R11	1-216-837-11	METAL CHIP	22K	5%	1/10W	R350	1-216-805-11	METAL CHIP	47	5%	1/10W
R12	1-216-809-11	METAL CHIP	100	5%	1/10W	R360	1-216-833-11	METAL CHIP	10K	5%	1/10W
R13	1-216-809-11	METAL CHIP	100	5%	1/10W	R361	1-216-833-11	METAL CHIP	10K	5%	1/10W
R14	1-216-809-11	METAL CHIP	100	5%	1/10W	R362	1-216-841-11	METAL CHIP	47K	5%	1/10W
						R363	1-216-821-11	METAL CHIP	1K	5%	1/10W
						R364	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
						R365	1-216-841-11	METAL CHIP	47K	5%	1/10W
						R367	1-216-841-11	METAL CHIP	47K	5%	1/10W
						R370	1-216-821-11	METAL CHIP	1K	5%	1/10W
						R371	1-216-821-11	METAL CHIP	1K	5%	1/10W

MDX-CA790X

MAIN	MINI JACK	SENSOR	SERVO
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Ref. No.	Part No.	Description	Remark
R372	1-216-821-11	METAL CHIP	1K 5% 1/10W
R373	1-216-821-11	METAL CHIP	1K 5% 1/10W
R374	1-216-821-11	METAL CHIP	1K 5% 1/10W
R377	1-249-417-11	CARBON	1K 5% 1/4W
R378	1-249-417-11	CARBON	1K 5% 1/4W
R403	1-216-809-11	METAL CHIP	100 5% 1/10W
R404	1-216-809-11	METAL CHIP	100 5% 1/10W
R405	1-216-821-11	METAL CHIP	1K 5% 1/10W
R406	1-216-821-11	METAL CHIP	1K 5% 1/10W
R407	1-216-849-11	METAL CHIP	220K 5% 1/10W
R408	1-216-849-11	METAL CHIP	220K 5% 1/10W
R411	1-216-821-11	METAL CHIP	1K 5% 1/10W
R412	1-216-821-11	METAL CHIP	1K 5% 1/10W
R502	1-249-401-11	CARBON	47 5% 1/4W
R503	1-216-845-11	METAL CHIP	100K 5% 1/10W
R520	1-216-864-11	METAL CHIP	0 5% 1/10W
R521	1-216-864-11	METAL CHIP	0 5% 1/10W
R522	1-216-864-11	METAL CHIP	0 5% 1/10W
R523	1-414-228-11	FERRITE	0uH
R524	1-469-876-11	FERRITE	0uH
R525	1-414-228-11	FERRITE	0uH
R526	1-469-876-11	FERRITE	0uH
R527	1-469-876-11	FERRITE	0uH
R528	1-414-228-11	FERRITE	0uH
R600	1-216-845-11	METAL CHIP	100K 5% 1/10W
R606	1-216-845-11	METAL CHIP	100K 5% 1/10W
R607	1-216-845-11	METAL CHIP	100K 5% 1/10W
R608	1-216-845-11	METAL CHIP	100K 5% 1/10W
R609	1-216-845-11	METAL CHIP	100K 5% 1/10W
R611	1-216-841-11	METAL CHIP	47K 5% 1/10W
R612	1-216-845-11	METAL CHIP	100K 5% 1/10W
R613	1-216-845-11	METAL CHIP	100K 5% 1/10W
R614	1-216-845-11	METAL CHIP	100K 5% 1/10W
R615	1-216-845-11	METAL CHIP	100K 5% 1/10W
R616	1-216-847-11	METAL CHIP	150K 5% 1/10W
R617	1-216-841-11	METAL CHIP	47K 5% 1/10W
R618	1-216-845-11	METAL CHIP	100K 5% 1/10W
R619	1-216-813-11	METAL CHIP	220 5% 1/10W
R620	1-216-813-11	METAL CHIP	220 5% 1/10W
R623	1-216-845-11	METAL CHIP	100K 5% 1/10W
R624	1-218-871-11	METAL CHIP	10K 0.5% 1/10W
R625	1-218-871-11	METAL CHIP	10K 0.5% 1/10W
R626	1-218-871-11	METAL CHIP	10K 0.5% 1/10W
R627	1-216-809-11	METAL CHIP	100 5% 1/10W
R628	1-216-809-11	METAL CHIP	100 5% 1/10W
R629	1-216-809-11	METAL CHIP	100 5% 1/10W
R630	1-216-833-11	METAL CHIP	10K 5% 1/10W
R631	1-216-833-11	METAL CHIP	10K 5% 1/10W
R700	1-216-845-11	METAL CHIP	100K 5% 1/10W
< SWITCH >			
S600	1-786-458-11	SWITCH, PUSH (1 KEY) (NOSE DETECT)	
S601	1-692-431-21	SWITCH, TACTILE (RESET)	
< THERMISTOR >			
TH400	1-803-350-21	THERMISTOR, POSITIVE	

Ref. No.	Part No.	Description	Remark
< TUNER PACK >			
TU10	A-3220-887-A	TUNER UNIT (TUX-030)	
< VIBRATOR >			
X90	1-579-242-41	VIBRATOR, CRYSTAL (4.332MHz)	
X601	1-795-877-11	VIBRATOR, CRYSTAL (27.648MHz)	
X602	1-567-098-41	VIBRATOR, CRYSTAL (32.768kHz)	
*****			
MINI JACK BOARD			
*****			
(Included in the mounted MAIN board)			
< JACK >			
J370	1-566-822-41	JACK (REMOTE IN)	
< RESISTOR >			
R375	1-216-809-11	METAL CHIP	100 5% 1/10W
*****			
A-3274-600-A SENSOR BOARD, COMPLETE			
*****			
For the parts on SENSOR board, replace the entire mounted board.			
*****			
A-3274-602-A SERVO BOARD, COMPLETE			
*****			
< CAPACITOR >			
C4	1-162-964-11	CERAMIC CHIP	0.001uF 10% 50V
C5	1-162-969-11	CERAMIC CHIP	0.0068uF 10% 25V
C6	1-165-897-11	TANTALUM CHIP	22uF 20% 10V
C8	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C11	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C12	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C13	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C15	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C16	1-164-227-11	CERAMIC CHIP	0.022uF 10% 25V
C17	1-162-966-11	CERAMIC CHIP	0.0022uF 10% 50V
C18	1-125-837-11	CERAMIC CHIP	1uF 10% 6.3V
C19	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C20	1-110-563-11	CERAMIC CHIP	0.068uF 10% 16V
C21	1-162-968-11	CERAMIC CHIP	0.0047uF 10% 50V
C22	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C23	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C25	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C26	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C27	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C29	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C31	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C32	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C33	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C34	1-164-360-11	CERAMIC CHIP	0.1uF 16V
C35	1-126-206-11	ELECT CHIP	100uF 20% 6.3V
C36	1-162-970-11	CERAMIC CHIP	0.01uF 10% 25V
C37	1-117-863-11	CERAMIC CHIP	0.47uF 10% 6.3V
C38	1-107-826-11	CERAMIC CHIP	0.1uF 10% 16V
C39	1-162-927-11	CERAMIC CHIP	100PF 5% 50V

## SERVO

Ref. No.	Part No.	Description				Remark	Ref. No.	Part No.	Description				Remark
C40	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V			< RESISTOR >					
C42	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V								
C43	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V	R1	1-218-863-11	METAL CHIP	4.7K	0.5%	1/10W		
C44	1-164-360-11	CERAMIC CHIP	0.1uF		16V	R2	1-216-797-11	METAL CHIP	10	5%	1/10W		
C45	1-164-360-11	CERAMIC CHIP	0.1uF		16V	R3	1-216-797-11	METAL CHIP	10	5%	1/10W		
C46	1-164-360-11	CERAMIC CHIP	0.1uF		16V	R4	1-216-809-11	METAL CHIP	100	5%	1/10W		
						R5	1-216-805-11	METAL CHIP	47	5%	1/10W		
C47	1-165-897-11	TANTALUM CHIP	22uF	20%	10V								
C48	1-164-360-11	CERAMIC CHIP	0.1uF		16V	R6	1-218-911-11	METAL CHIP	470K	0.5%	1/10W		
C49	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V	R7	1-218-911-11	METAL CHIP	470K	0.5%	1/10W		
C50	1-125-838-11	CERAMIC CHIP	2.2uF	10%	6.3V	R9	1-216-839-11	METAL CHIP	33K	5%	1/10W		
C51	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	R10	1-216-829-11	METAL CHIP	4.7K	5%	1/10W		
						R11	1-216-994-11	METAL CHIP	13K	5%	1/10W		
C52	1-164-360-11	CERAMIC CHIP	0.1uF		16V								
C53	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V	R12	1-216-994-11	METAL CHIP	13K	5%	1/10W		
C54	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	R13	1-216-842-11	METAL CHIP	56K	5%	1/10W		
C55	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	R14	1-216-825-11	METAL CHIP	2.2K	5%	1/10W		
C56	1-162-927-11	CERAMIC CHIP	100PF	5%	50V	R15	1-216-825-11	METAL CHIP	2.2K	5%	1/10W		
						R16	1-216-825-11	METAL CHIP	2.2K	5%	1/10W		
C57	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V								
C58	1-126-607-11	ELECT CHIP	47uF	20%	4V	R17	1-216-833-11	METAL CHIP	10K	5%	1/10W		
C59	1-126-607-11	ELECT CHIP	47uF	20%	4V	R18	1-216-845-11	METAL CHIP	100K	5%	1/10W		
C62	1-164-360-11	CERAMIC CHIP	0.1uF		16V	R19	1-216-855-11	METAL CHIP	680K	5%	1/10W		
C63	1-164-360-11	CERAMIC CHIP	0.1uF		16V	R20	1-216-821-11	METAL CHIP	1K	5%	1/10W		
						R21	1-216-827-11	METAL CHIP	3.3K	5%	1/10W		
C64	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C68	1-164-360-11	CERAMIC CHIP	0.1uF		16V	R22	1-216-857-11	METAL CHIP	1M	5%	1/10W		
C69	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V	R23	1-216-811-11	METAL CHIP	150	5%	1/10W		
C70	1-126-607-11	ELECT CHIP	47uF	20%	4V	R24	1-216-821-11	METAL CHIP	1K	5%	1/10W		
C71	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V	R25	1-216-845-11	METAL CHIP	100K	5%	1/10W		
						R28	1-216-833-11	METAL CHIP	10K	5%	1/10W		
C78	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V								
C80	1-164-360-11	CERAMIC CHIP	0.1uF		16V	R29	1-216-805-11	METAL CHIP	47	5%	1/10W		
C81	1-164-360-11	CERAMIC CHIP	0.1uF		16V	R30	1-216-833-11	METAL CHIP	10K	5%	1/10W		
C83	1-164-360-11	CERAMIC CHIP	0.1uF		16V	R31	1-216-809-11	METAL CHIP	100	5%	1/10W		
		< CONNECTOR >				R32	1-216-809-11	METAL CHIP	100	5%	1/10W		
						R35	1-216-809-11	METAL CHIP	100	5%	1/10W		
CN2	1-794-522-21	CONNECTOR, FFC/FPC (ZIF) 20P				R36	1-216-809-11	METAL CHIP	100	5%	1/10W		
CN3	1-784-862-21	CONNECTOR, FFC (LIF (NON-ZIF)) 10P				R37	1-216-809-11	METAL CHIP	100	5%	1/10W		
CN5	1-764-616-41	HOUSING, CONNECTOR (PC BOARD) 30P				R38	1-216-864-11	METAL CHIP	0	5%	1/10W		
		< DIODE >				R39	1-216-821-11	METAL CHIP	1K	5%	1/10W		
						R40	1-216-821-11	METAL CHIP	1K	5%	1/10W		
D1	8-719-036-94	DIODE MM3Z5V6ST1				R42	1-216-809-11	METAL CHIP	100	5%	1/10W		
		< IC >				R43	1-216-809-11	METAL CHIP	100	5%	1/10W		
						R44	1-216-864-11	METAL CHIP	0	5%	1/10W		
IC1	8-752-080-95	IC CXA2523AR				R45	1-216-809-11	METAL CHIP	100	5%	1/10W		
IC2	8-759-836-79	IC BH6519FS-E2				R47	1-216-809-11	METAL CHIP	100	5%	1/10W		
IC3	6-703-825-01	IC R1114N251D-TR-FA				R50	1-216-821-11	METAL CHIP	1K	5%	1/10W		
IC4	8-752-405-14	IC CXD2667R				R53	1-216-809-11	METAL CHIP	100	5%	1/10W		
IC6	8-759-040-83	IC BA6287F-E2				R54	1-216-809-11	METAL CHIP	100	5%	1/10W		
						R56	1-216-809-11	METAL CHIP	100	5%	1/10W		
IC7	6-802-860-02	IC MB90473PFV-G-150-BNDE1				R57	1-216-809-11	METAL CHIP	100	5%	1/10W		
		< COIL/RESISTOR >				R58	1-216-809-11	METAL CHIP	100	5%	1/10W		
						R59	1-216-809-11	METAL CHIP	100	5%	1/10W		
L2	1-414-398-11	INDUCTOR	10uH			R60	1-216-841-11	METAL CHIP	47K	5%	1/10W		
L3	1-414-398-11	INDUCTOR	10uH			R61	1-216-841-11	METAL CHIP	47K	5%	1/10W		
L4	1-414-398-11	INDUCTOR	10uH			R62	1-216-841-11	METAL CHIP	47K	5%	1/10W		
L5	1-216-864-11	METAL CHIP	0	5%	1/10W								
		< TRANSISTOR >				R63	1-216-809-11	METAL CHIP	100	5%	1/10W		
						R65	1-216-809-11	METAL CHIP	100	5%	1/10W		
						R66	1-216-809-11	METAL CHIP	100	5%	1/10W		
Q1	8-729-010-05	TRANSISTOR	MSB709-RT1			R67	1-216-809-11	METAL CHIP	100	5%	1/10W		
Q2	8-729-010-25	TRANSISTOR	MSD601-RT1			R68	1-216-809-11	METAL CHIP	100	5%	1/10W		
Q3	8-729-010-25	TRANSISTOR	MSD601-RT1										

MDX-CA790X

SERVO

SUB

Ref. No.	Part No.	Description	Remark			
R69	1-216-845-11	METAL CHIP	100K	5%	1/10W	
R70	1-216-845-11	METAL CHIP	100K	5%	1/10W	
R76	1-216-853-11	METAL CHIP	470K	5%	1/10W	
R77	1-216-819-11	METAL CHIP	680	5%	1/10W	
R91	1-218-727-11	METAL CHIP	30K	5%	1/10W	
R92	1-216-839-11	METAL CHIP	33K	5%	1/10W	
R94	1-216-845-11	METAL CHIP	100K	5%	1/10W	

< VIBRATOR >

X1	1-795-821-21	VIBRATOR, CERAMIC (22.57MHz)
X2	1-795-822-21	VIBRATOR, CERAMIC (18.43MHz)

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SUB BOARD  
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1-792-195-11	CABLE, FLEXIBLE FLAT (14 CORE)
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< CONNECTOR >

CN801	1-817-159-11	SOCKET, CONNECTOR 14P
< LED >		
LED801	8-719-082-38	LED CL-270SR-C-TS (DISC SLOT ILLUMINATION)

< SWITCH >

LSW801	1-771-883-31	SWITCH, TACTILE (WITH LED) (▲)
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MISCELLANEOUS  
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2	1-792-195-11	CABLE, FLEXIBLE FLAT (14 CORE)
16	1-776-527-61	CORD (WITH CONNECTOR) (ISO) (POWER)
56	1-694-976-11	CONDUCTIVE BOARD, CONNECTION
203	1-827-113-11	WIRE, PARALLEL (FFC) (10 CORE)
▲ 215	8-583-116-03	OPTICAL PICK-UP KMS-242E/Q-RP
F300	1-532-877-11	FUSE (BLADE TYPE) (AUTO FUSE) (10A/32V)
LCD901	1-805-076-11	DISPLAY PANEL, LIQUID CRYSTAL
M901	A-3301-407-A	MOTOR ASSY, SP (SPINDLE)
M902	A-3291-190-A	MOTOR ASSY, SL (SLED)

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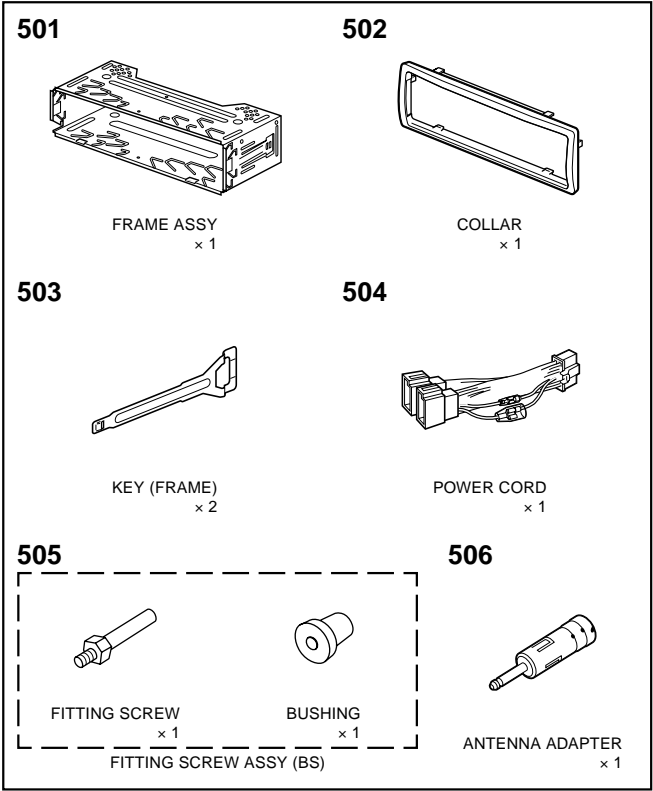
ACCESSORIES  
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3-251-286-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, DUTCH, ITALIAN)
3-251-287-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, GERMAN, DUTCH, ITALIAN)

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PARTS FOR INSTALLATION AND CONNECTIONS  
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501	X-3382-647-1	FRAME ASSY, FITTING
502	3-246-443-01	COLLAR
503	3-246-471-01	KEY (FRAME)
504	1-776-527-61	CORD (WITH CONNECTOR) (ISO) (POWER)
505	X-3382-926-1	SCREW ASSY (BS), FITTING
506	1-465-459-21	ADAPTER, ANTENNA



The components identified by mark ▲ or dotted line with mark ▲ are critical for safety.  
Replace only with part number specified.